Annual Report of the Department of Industries, Bombay Province 1938-39

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ANNUAL REPORT OF THE DEPARTMENT OF INDUSTRIES, BOMBAY PROVINCE, FOR THE YEAR 1938-39.

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CHAPTER I.

GENERAL INDUSTRIAL OUTLOOK DURING THE YEAR.

(i) Review of General Conditions

During the year under report both the demand for, and the prices of, staple agricultural commodities declined sharply which caused a further decline in the already much reduced purchasing power of the masses which, it was feared, would bring in a recession in the industrial prosperity of the Province. There was a decrease in the import of foreign merchandise and tone of the money market was easy during the year under review.

Few new factories were started during the year except in the group "artificial silk industry" and "engineering industry", the consumption of electrical energy for industrial purposes decreased and the rate of industrial production tended to slow down although the average production during the year was larger than in the previous year in several cases. The number of new flotations of industrial and other companies was also smaller than in the previous year and the industrial securities market recorded a downward trend.

(ii) Brief Review of Important Industries of the Province.

2. **Cotton Mill Industry.**—This industry did not fare as well as in the previous year. The total number of mills in the Province decreased by 4 to 177 and the industry had to bear the burden of enhanced labour costs. The domestic demand for Indian textiles tended to diminish as a result of severe decline in the purchasing power of the people, further aggravated by the resumption of Japanese competition. Exports of Indian textiles to the overseas markets was handicapped owing to the re-entry of Japan as a fierce competitor and to fresh restrictions imposed on imports of cotton textiles by countries like Egypt. Although cotton mill production was on the increase during the first half of the year owing to forward sales of cloth effected in the previous year, there was an appreciable slowing down of production towards the close of the year under review. Night shift working was much reduced both in Bombay and Ahmedabad, the stocks of cloth with the mills continued to accumulate and it was reported that price concessions had to be granted in order to facilitate the movement of stocks. The year's working was, however, satisfactory on the whole and from the annual reports received from 18 cotton mills in the Province, it was found that 16 mills made profit during the year of which 8 declared a dividend.

3. **Woollen Mills and Woollen Industry.**—There was practically no change in the condition of the Woollen Industry. Local production of yarn and piecegoods including hoisery maintained more or less the same

level as in the last year and prices were steady. There was a considerable decline in the value of imports of foreign woollen goods, the actual figures being Rs. 95 lakhs for the year 1938 as against Rs. 158·8 lakhs during 1937.

4. **Hoisery.**—This industry suffered a set back during the year under report and both the local production as well as foreign imports showed a marked decline, the percentage decline in the quantity of local production being 15 per cent. and that in the value of imports being 31 per cent.

5. **Silk Industry.**—There was a sharp increase in the number of artificial silk weaving factories during the year. The industry, however, continued to suffer severely uneconomic internal competition due to over-production and frequent labour trouble. The formation of an association of producers to regulate prices and competition was being encouraged by the Department as a way out of the present unhealthy state of this industry.

6. **Engineering Industry.**—During the year the number of engineering concerns registered under the Factory Act recorded an increase of about 13 per cent. The increases were mainly in the groups " building and constructional work " and " small manufacturing and repair shops ". There is still a large field for extensions in the manufacture of small tools, electrical fittings, gas, sanitary and hardware stores and mill stores. On the whole, the Engineering Industry was in a satisfactory position.

7. **Gold Thread Industry.**—The depressed state of this industry reported last year continued during the year under review. The efforts made by this Department to form a marketing association for this industry so as to prevent unhealthy internal competition have not yet borne fruit.

8. **Cigarette Industry.**—An event of importance to this industry was the establishment in Bombay of a large cigarette factory by an English tobacco firm. Details in regard to its capacity, etc., are not available. Imports of cigarettes into Bombay increased and the local indigeneous industry made bitter complaints against unfair competition by foreign tobacco concerns operating in India. The results of the enquiry made by this Department into the condition of this industry indicated good possibilities of developing the industry. Steps to be taken towards this end were under the consideration of Government when this year closed.

9. **Gas Mantle Industry.**—There was a steady improvement in the condition of this industry. The value of the imports of gas mantles into Bombay fell off considerably, from Rs. 1,41,289 in the year 1937-38 to Rs. 61,520 during the year under review.

10. **Chemical Industry.**—The Chemical Industry except the heavy chemical industry, on the whole, did fairly well during the year under report. The number of factories coming under the Factories Act increased to 23 from 9 in the previous year. The value of chemicals imported into Bombay declined by about 8 per cent.

11. **Sugar Industry.**—The number of sugar factories worked on the vacuum pan system at the beginning of 1938–39 was six but a new sugar factory of this type was started at Borgaon in Sholapur District which formerly used to produce Khandsari sugar. With the conversion of this factory the number of Khandsari sugar factories became 8 as against 9 in the last year. The output of the sugar factories amounted to 48,878 tons as against 59,954 tons last year. The Khandsari sugar factories did not work during the year under report. The imports of sugar into Bombay showed a considerable increase from 2,986 tons valued at Rs. 3,87,445 in the previous year to 12,560 tons valued at Rs. 16,17,650 during the year under report. The prices per cwt. of Indian sugar for "good" and "ordinary" qualities increased by about 21 per cent. and 24 per cent. respectively.

12. **Match Industry.**—Out of the 9 match factories which had been working during the previous year, 4 did not work during the year under review. Two cottage factories, however, augmented the local production of matches. The aggregate production of all the seven working factories was less than the production of last year by 166,553 gross match boxes. Foreign imports continued to be negligible as usual.

13. **Paper Industry.**—The number of paper mills erected in this Province as well as their total authorised capital continued the same as in the previous year. One of the paper mills situated in Bombay did not work in the year 1938. The production of the other paper mills increased from 4,299 tons valued at 15·3 lakhs rupees in 1937 to 4,523 tons valued at 16·5 lakhs rupees in 1938. During the year under report a new concern was floated for the manufacture of pulp and paper from the bamboos of the Kanara Forests. The registered office of this concern is located in Bombay.

14. **Glass Industry.**—The position of the glass Industry continued to be unsatisfactory as in the last year due to severe Japanese competition. During the year under report one glass factory did not work at all and two glass factories suspended operation temporarily during the latter part of 1938.

In all about 298 tons of soda ash were consumed by the glass factories in this Province as against 221 3/5 tons of soda ash consumed during last year. The imports of glass materials and glassware into Bombay recorded a decrease of about 14 lakhs as compared with the previous year.

15. **Oil Mills.**—The Industry, as a whole, made good progress during the year under report. The number of mills coming under Factories Act stood at 100 during the year 1938 as against 79 during 1937 and 71 in 1936. The increase was due to the extension of the Factories Act to smaller concerns as well. The exports of oil from the Port of Bombay during the year were maintained at more or less the same level as in the preceding year.

16. **Vegetable Ghee.**—The two concerns manufacturing vegetable ghee referred to in the last year's report continued to do well during the year. A third factory was being erected in Bombay. The figures of production of these concerns are not available. The imports of vegetable ghee into Bombay during the year under report decreased considerably and were only about half of what they were in the previous year.

17. **Soap Industry.**—The industry made good progress during the year under report. This is supported by the fact that as compared with the previous year, the value of imports of soap into Bombay declined by about a lakh of rupees while the exports from Bombay increased to the same extent.

18. **Confectionery.**—The number of factories coming under the Factories Act was 52, including the 43 establishments engaged in the manufacture of confectionery, biscuits and bakery, notified under section 5 of the Act. The industry continued to suffer from internal cut-throat competition.

19. **Aluminium-Ware Industry.**—During the year under review there has been no improvement in the output of local aluminium factories. There was also a decline in the imports of aluminium articles into India and Bombay, this year.

(iii) New Enterprises.

20. **Manufacture of Surgical and other Instruments.**—A firm of wholesale importers of the above instruments has installed a well equipped machineshop for manufacturing locally the imported goods. The work turned out is good. All raw materials have to be imported.

21. **Artificial Silk Weaving.**—Additional factories have been added to the art silk weaving factories in Bombay.

22. **Toy manufacture.**—A small well equipped factory has started work utilising indigenous timbers. Class of manufacture turned out shows ingenuity and very good quality of finish.

23. **Shuttle Manufacture.**—Another shuttle manufacturing Company has started in Bombay. This firm manufactures all classes of shuttles

both for power and handlooms. The work turned out is very satisfactory. All raw materials have to be imported, as Indian timber is not available of the hardness necessary.

24. **Printing Rollers for Textile Printing Machine.**—A factory has been started near Bombay for making copper printing rollers. The necessary skilled staff are all imported.

25. **Cigarette Industry.**—A new large cigarette manufacturing factory was established in Bombay by an English firm during the year. Details about this factory in regard to its capacity, etc., are not available.

26. **Engineering Industry.**—During the year 24 new engineering concerns came into existence, the majority of which consisted of "Building and Construction Works" and "Small Manufacturing and Repairs Shops".

27. **Vegetable Ghee.**—One vegetable ghee factory was in the course of erection during the year under report. This will be an addition to the already existing two factories.

28. **Twist Drills, Reamers, and Milling Cutters.**—A factory has been established in Bombay for the manufacture of twist drills, reamers and milling cutters. The quality and finish of the articles produced as examined by the Industrial Engineer of this Department were found to be good. The manufacturers have been able to supply their products to Railways, Army Headquarters and Indian Stores Department. The management of the factory is non-Indian but all workers employed are Indians.

INDUSTRIAL ADVISORY BOARD.

29. During the year Government were pleased to create an Industrial Advisory Board to advise them on the following matters :—

(i) All the new schemes or proposals relating to industrial development in the Province of Bombay.

(ii) All matters of policy affecting the various sections of the Department of Industries.

(iii) All matters of public interest in connection with the Department of Industries.

(iv) Such other matters on which Government desire to have the opinion of the Board.

The following was the personnel of the Board :—

Chairman.

(1) Sir Chunilal V. Mehta, M.A., LL.B., K.C.S.I.

Members.

(2) Dr. K. A. Hamied, B.Sc., M.A., Ph.D. (Berlin), A.I.C., F.C.S. (Lond.), M.L.C., c/o Okasa Berlin (India), Ltd., Bombay.

(3) Dr. M. C. Tumminkatti, M.Sc., Ph.D. (Pharam. Chem.), Chief Chemist and Works Manager, Karnatak Chemical Works, Gadag.

(4) Mr. S. D. Saklatwala, Director, Tata Sons Ltd., Bombay.

(5) Mr. M. C. Ghia, M.L.A., Bombay.

(6) Mr. S. P. Ogale, Managing Agent, Ogale Glass Works Ltd., Ogalewadi, District Satara.

(7) Mr. B. S. Dabke, Director, Morarji Gokuldas Mill, Bombay.

(8) Mr. N. G. Pawar, B.A., B.E. (Civil), Engineer and Contractor, Poona.

(9) Mr. J. K. Mehta, M.A., Secretary, Indian Merchants' Chamber, Bombay.

(10) Mr. Vadilal L. Mehta, Managing Agent, Rohit Mills Ltd., Ahmedabad.

(11) Mr. R. N. Abhyankar, B.A., LL.B., Secretary, Paisa (Industrial) Fund, Poona.

(12) Mr. Umashankar Dixit, Secretary, Marwari Chamber of Commerce, Bombay.

(13) Mr. K. B. Deshmukh, M.L.A., Sangamner.

(14) Dr. V. K. R. V. Rao, M.A., Ph.D. (Cantab.), Principal and Professor of Economics, Sheth Lalbhai Dalpatbhai Arts College, Ahmedabad.

(15) The Director of Industries (Ex-officio).

The Deputy Director of Industries acted as Secretary of the Board. The term of office of the members of the Board was fixed for one year, in the first instance, from June 1938. The Board met twice during the year.

The Board was empowered to constitute sub-committees for (*a*) the marketing of hand-loom products, (*b*) the selection of chemistry and electrical engineering scholars, and for such other work as the Board may

consider necessary, in place of the existing committees. Accordingly the following sub-committees were formed at the first meeting of the Board held in August 1938 :—

(1) Sub-committee on Marketing of Handloom Products.

(2) Sub-committee on Technical Scholarships.

(3) Sub-committee on Marketing of Handloom Products to deal with subjects dealt with in Chapters IV and VI of the Annual Report of the Director of Industries for the year 1936–37.

(4) Sub-committee on other cottage industries, *vide* Chapters IV and VII of the Report of the Director of Industries for the years 1936–37 and 1937–38 respectively.

(5) Sub-committee on Experiments, *vide* Chapter III of the Annual Report.

(6) Sub-committee on Fisheries.

The Board considered and approved of the following schemes submitted to Government by the Department :—

(i) Scheme for Experiments in artificial silk.

(ii) Lead Pencil Manufacture.

(iii) Development of Paper and Pulp Industry.

(iv) Scheme for improvement in fishing methods.

(v) Potteries Manufacture.

(vi) Survey of Sericulture and Ericulture Industry in the Bombay Province.

Details of these schemes have been given in subsequent chapters.

In addition to the foregoing, the views of the Board were also obtained on the following subjects :—

(1) **Assistance to Tobacco Industry.**—Representations were made by the indigenous tobacco companies in this Province against severe competition from foreign firms engaged in this industry. Apart from the question of investment of foreign capital in this industry in Bombay, there were also other points raised by the different tobacco concerns and the Indian Cigarette Manufacturing Association. The Department examined these and circulated to the Board a detailed note on the subject with its remarks for consideration. The Board's recommendations in the matter were forwarded to Government for consideration.

The proposal made by this Department for the appointment of an expert blender to render technical advice to the Tobacco Companies was approved by the Board. Necessary enquiries with a view to addressing Government in the matter were in progress at the end of the year under report.

(2) **Cinema Industry.**—The Board had before it for consideration a representation made to the Government of Bombay by the Motion Pictures Society of India protesting against the building of a large cinema by a very large and influential film producing company of America. The Society held the view that the investment of foreign capital in the construction of cinema houses will adversely affect the existing cinemas in which a large amount of Indian capital is already invested.

The Board fully appreciated the arguments advanced in the representation and recommended to Government to take suitable action in order to meet the complaints of the Society.

(3) **Development of Industries subsidiary to the Textile Industry.**—The Board proposed that the problem of manufacturing mill stores and supplies acceptable to the Textile Industry such as pickers, picking bands, cotton-banding, ropes, rollers skins, picking sticks, healds, reeds, shuttles, etc., should be examined and investigated. The Department accordingly issued a questionnaire to different interested firms, but the enquiries were not completed during the year under review.

(4) **Glass Bangle Industry.**—A sub-committee was formed to examine and report on the steps to be taken by the Department of Industries for the improvement of the Bangle Industry on cottage scale. Mr. Ogale very kindly offered the facilities of his glass factory for experimental work and the training of village bangle workers in the improved technique.

The sub-committee once met in February 1939 and suggested that the furnace designed by the Department should be tried out at Ghodgeri and local men should be trained till they are accustomed to the work of the furnace. It also recommended the manufacture of crucibles to the sizes required for the furnace for melting glass for batch to be made at Ogale Glass Works and the Paisa Fund Glass Works and they should be tried. The Department agreed to depute an Assistant Chemist for testing the crucibles and study the factors which affect their life in the melting of glass.

(5) **Strengthening the Department of Industries.**—At its meeting held in December 1938, the Board considered a detailed note from the Director of Industries on " strengthening the resources and knowledge of the Department of Industries to enable it to assist all classes of Industries." The note explained in detail the present organization of the Department and its further requirements for the purpose of giving expert technical advice and guidance to industry generally. The Board generally approved of the proposals set out in the note. The matter was under the consideration of Government when the year closed.

(6) **Assistance to Small Scale Industries.**—The Board considered and generally agreed to Mr. Ogale's suggestions for assisting the existing small scale industries, especially in the matter of providing financial help to them. The Chairman offered to induce a local Bank to arrange to discount commercial bills of the small scale industries at market rate of interest if Mr. Ogale would submit definite proposals to him.

(7) **Marketing of Cottage and Small Scale Industries' Products.**—The sub-committee for the marketing of handloom products considered amongst other matters the question of setting up a central sales depot in Bombay for the display and sale of handloom products as well as of other cottage industries. A detailed scheme prepared by the Director of Industries in this behalf received the approval of the Committee.

CHAPTER II.

WORK OF THE DEPARTMENT FOR ORGANISED INDUSTRIES.

30. As in previous years, a variety of industries in the Province sought technical advice and help of the Department in the solution of their practical difficulties encountered in the processes of manufacture. A list of industries, which were assisted by the Department, is given below :—

Soap manufacture.
Casein manufacture.
Vegetable oil crushing industry.
Charcoal briquetting.
Glass manufacture.
Casein glue manufacture.

31. In addition to the foregoing, a number of inquiries for technical information on a variety of subjects was also received and dealt with by the Department during the year under review. Some of the subjects covered by these inquiries are noted below which may be of interest :—

Cashewnut, drinking straws, prospects of straw-board manufacture, prospects of export of unadulterated casein, manufacture of celluloid articles, canning of fruits, uses of tamarind fruit and seed, use of Dhayati flowers in tanning, insecticides, etc., etc.

32. A number of soap manufacturing concerns in the Province was consulted regarding their difficulties and steps to be taken to overcome them. Replies received suggest that the industry should be assisted by (1) a reduction in railway freights, (2) the grant of cheap finance, (3) free technical advice, (4) patronage by Government and semi-Government departments, (5) standardisation of specifications, (6) protection

to small factories, (7) control of foreign firms, and (8) efficient sales organisation. These points were under the consideration of the Department when the year closed.

33. The Gold Thread Industry of Surat, it was found, needed a marketing association on co-operative basis which would tend to control and eradicate uneconomic internal competition in the industry. The matter was taken up by the Department with the gold thread workers and the Co-operative Department.

34. The Department carried out investigations into the various difficulties met with by the indigenous cigarette factories in this Province which brought to light the need for (1) the provision of cheap finance to the industry, (2) the services of an expert blender and (3) the prevention of influx of foreign capital in this industry. These matters were put before the Industrial Advisory Board whose recommendations were forwarded to Government for necessary action.

35. Although the local textile mill industry is a large consumer of a variety of stores and supplies valued at several crores of rupees annually, the bulk of these requirements is imported from abroad. Stores and supplies manufactured locally are said to be generally inferior to the imported articles. An inquiry was, therefore, set on foot by the Department during the year regarding the possibility of manufacturing improved quality of machine parts, leather goods such as belting, shuttles, healds and reeds, etc. locally. The inquiry had not concluded but will be continued.

36. **Pencil manufacture.**—Investigations into the manufacture of pencils in this Province are still in progress.

37. **Slate Slabs.**—Samples of slate available locally were sent to the United States of America for report which has now been received and is definitely against the utility of the local slabs. Deeper quarrying down to a depth of 18 to 20 feet was tried but the slate slabs showed no improvement.

38. **Aluminium.**—Since the publication of the Bulletin by this Department on the possibility of producing aluminium metal from the bauxite deposits near Bombay, various firms interested in the project negotiated with the Hydro-Electric Power Companies for the supply of required electrical energy at economic rates. It is understood, however, that the rate offered by the Hydro-Electric Companies is not sufficiently low for economic production of aluminium here.

39. **Artificial Silk Industry.**—Government having decided to refer the question of purchase of a pilot plant for the manufacture of artificial

silk on an experimental scale in this Province to the Industrial Advisory Board, the matter was placed before the Board. An interim report received from the late Industrial Chemist of the Department, whom Government had authorised to collect information on the subject during his visit to Europe, was also placed before the Board and the Board's recommendations in the matter were forwarded to Government.

40. **Paper and Pulp Industry.**—Two private parties having submitted to Government schemes for the development of paper and pulp industry in this Province, the scheme sanctioned by Government for the development of paper and pulp industry was not proceeded with pending further orders of Government. Government having indicated what concessions they would be prepared to give under certain conditions, the promoters of one of the schemes have already floated a Paper and Pulp Company having registered office in Bombay. The other scheme refers to the development of the Dangs Forest Area and has been recommended by the Provincial Government to the Government of India under whose administrative control the Dangs Forests are.

COMMERCIAL AND INDUSTRIAL INTELLIGENCE.

41. The total number of commercial inquiries received and answered by the Department during the year was 1,561 against 1,136 in 1937-38 and 718 in 1936-37. As in the previous year several inquiries of a confidential nature were received from the Stores Purchase Department, U. P., Director-General of Commercial Intelligence and Statistics, Calcutta, Indian Stores Department, Bombay, and various other authorities. In addition to written inquiries, a very large number of enquirers called at the headquarters and were granted personal interviews by the officers concerned and assisted with the required information.

STATE-AID TO INDUSTRIES.

42. The State-aid to Small Industries Rules, 1935, having been found inadequate and unsatisfactory for the purpose of assisting industries the Bombay Legislative Assembly, on the initiative of the Honourable the Minister for Local Self-Government, passed the following resolution :—

"This House is of opinion that for the development of industries Government may, in appropriate cases, give aid to indigenous enterprises in the Province by one or more of the following ways :—

(*i*) by lending or subscribing part of the capital needed,

(*ii*) by guaranteeing a minimum return on the invested capital,

(*iii*) by placing the available technical advice at the disposal of the person concerned,

(*iv*) by giving such other facilities as may be deemed necessary.

Provided that in giving such aid Government may direct that the maximum return on the invested capital shall be restricted to a reasonable limit and may lay down such further conditions as may in the public interest be deemed necessary.

Provided further that no such aid shall be given as may result in unfair competition with existing industries."

43. Draft rules have since been framed pursuant to the above resolution and are now under consideration by Government. Under the new Rules it has been proposed to provide various forms of state-aid as follows :—

(*a*) the grant of a loan ;

(*b*) the guarantee of a cash credit, overdraft, or fixed advance with a bank ;

(*c*) the taking of shares and debentures ;

(*d*) the guarantee of interest on preference shares or debentures ;

(*e*) the guarantee of a minimum return on the whole or part of the capital of a joint stock company ;

(*f*) the grant on favourable terms of land, raw material, firewood, water or any other property of the Bombay Government ;

(*g*) the payment of subsidies for the conduct of research work ;

(*h*) supply of machinery on hire-purchase system, and

(*i*) the payment of grant-in-aid to educated young men to settle in any industry or to develop any business or industry in which they are already engaged.

44. The total number of applications for state-aid received during the year was 40, out of which 5 were submitted to Government for orders. Some of the applications received could not be considered as the parties could not furnish sufficient security or did not supply information. Enquiries regarding the remaining applications were in progress at the close of the year under review.

45. Two parties, to whom loans have been granted under the State-aid to Industries Rules, have paid their instalments regularly and appear to be doing well during the year. One of these parties applied for reduction in the monthly instalments of repayment, which, after due investigation, was granted.

CHAPTER III.

EXPERIMENTAL INDUSTRIAL WORK AND PRACTICAL DEMONSTRATIONS FOR THE BENEFIT OF SMALL SCALE AND COTTAGE INDUSTRIES.

46. **Industrial Engineer's Workshop.**—Completion of the Industrial Engineer's Workshop could not be effected until the early

part of March 1939 due to unavoidable delays. Its completion has, however, removed a long-felt want for much-needed equipments and facilities for effecting improvements in tools, appliances and methods of the small scale and cottage industries.

Government have been pleased to sanction experimental research work on the :

(1) Manufacture of imitation gold thread,

(2) Manufacture of glass bangles,

(3) Manufacture of sann hemp products, and

(4) Improvement of the village oil industry.

Work was started on them with the exception of the last item. A brief description of the work done on these experiments during the year is given below.

47. **Imitation Gold Thread.**—Some experimental tests were made on (1) annealing of wire, (2) electrolytic cleaning, (3) colouring by heat treatment, and (4) chemical depositing of gold. The results obtained so far are satisfactory and further experiments in these directions will continue during the next financial year.

48. **Glass Bangle Manufacture.**—Experiments on the preparation of coloured glasses with the use of soda bottle cullet for batch mixing were started and the preliminary investigations have given encouraging results. It is proposed to continue these experiments in the coming year.

The Glass Chemist was occupied during a part of the year in constructing wood-fired glass furnaces designed by this Department for the bangle makers at Ghodgeri and Tallur, to whom the technique of chemical and batch mixing for glass bangles was fully explained. The introduction of these furnaces has greatly improved the quality of the glass and reduced the cost of manufacture.

Breakages of glass pots by bangle makers remains, however, a difficult problem for solution and it is proposed to continue testing improved pots manufactured by the larger glass works in the Province.

It is satisfactory to note that Government have sanctioned the proposal of this Department to supply glass furnaces designed by this Department to the village bangle makers at concessional rates and it is expected that in the coming year a number of these furnace units will be installed throughout the Province which will greatly benefit the village bangle industry.

49. **Sann Hemp and its manufacture.**—The Fibre Expert appointed in July 1938, has carried out a preliminary survey of the important hemp

growing districts of the province, viz., Ratnagiri, Belgaum, Ahmednagar, Thana and Poona, from which it is gathered that the existing fibre resources of the Province consist of—

(1) Bombay hemp—Sann hemp or Tag (Crotolaria juncea).

(2) Deccan hemp or Ambari (Hibiscus Cannabinus).

(3) Agavas or Aloe fibre plant (Ghaipat or Ketki).

In addition there are a number of minor unexploited fibres such as Linseed, Banana and Caryota urens.

The survey has brought to light a considerable amount of information regarding "Dew-guddy" or "Devgad" variety of sann hemp from Ratnagiri District which is much prized in Europe and the practical disappearance from the market of such well-known grades of hemp as "Salsi" from Belgaum, "Godhra" from Panch Mahals and "Khandesh" from Khandesh due to bad methods of preparation and wilful adulteration with sand and mud and watering of bales. It was found that the cultivators are finding the prices unremunerative and hence giving up cultivation of the same. It was also found that the fibres are most haphazardly harvested and retted and the fibre is twisted in hank. Samples of these fibres were separately treated and it was found that by washing in several changes of water it was possible to improve the quality and the colour appreciably. The Director of Agriculture, Bombay Province, Poona, was informed about the methods to be adopted to improve the quality of the fibre.

An investigation regarding industrial utilisation of fibres was also made and it was found that while fibres from Devgad and Rajapur could be spun into fine yarns for spinning, canvas-making and twine-making in competition with European products, the fibres from other districts being coarser could only be used for the production of coarser twine and for rope-making on cottage industry basis.

In the meantime, about 100 lbs. of selected Devgad and Rajapur hemp have been sent to Scotland for tests in spinning and for making twine therefrom. Experiments on the weaving of sann hemp yarn into canvas, tarpaulins and ground-sheets, on the handlooms were also in hand and will be continued.

Experiments for manufacture on cottage industry scale of twines and two-ply ropes from Salsi and Godhra fibres have also been taken in hand and it is proposed to continue these experiments next year.

In addition to the foregoing, the Fibre Expert has also examined Ambari and Agave fibres. Ambari appeared to be a useful substitute for jute and it is proposed to carry on experiments in spinning and weaving it

into gunny and similar fabrics. Chemical treatment of the fibre for admixture with wool is also under contemplation.

Preparation of Agave fibres by water-retting and rope-making provide occupation to large numbers of the depressed classes in the Deccan. The Fibre Expert examined the existing species of Agaves and the methods of water-retting and the resultant fibres and also the market value obtainable for the same. It is, however, considered that decorticating by machine will greatly improve the quality of the Agave fibre produced in this province. It is interesting to note that Agave Cantala fibre of this province has been identified with the commercial sisal hemp plant of Java and Phillipines. Mechanically separated fibres have been tested by a firm in London and two Indian firms and the valuation report received from them has been encouraging. The report lends support to the possibility of developing Agave Cantala as a source of sisal hemp in this province.

Investigation on linseed fibre has been taken in hand in response to a reference received from the Director, Industrial Research Bureau, New Delhi.

A number of forest barks and stems was obtained from the Forest Department for examination and investigation of their industrial uses, but the work could not be proceeded with until the Industrial Engineer's Workshop and the Chemical Laboratory were ready fully-equipped. The Fibre Expert, however, examined and carried out experiments on " Caryota urens " to determine its value as a Brush Fibre and how to market it in competition with " Kittul " fibre of Ceylon. Recommendations on the methods to be adopted for the collection of marketable " Kittul " fibre were communicated to the Chief Conservator of Forests, Bombay Province, Poona.

A note on the development of Fibre Resources of the Bombay Province was prepared by the Fibre Expert for the Bombay Economic and Industrial Survey Committee. A note on two-ply rope-making in Bombay Province was sent to the Director, Industrial Research Bureau, New Delhi. Technical advice on Ramie or Rhea fibre, sisal hemp, sann hemp and other fibres was given to several non-official persons who inquired of the Department regarding these fibres.

The Fibre Expert was deputed to Rev. Long's Sisal Institute to give necessary technical advice. He also examined and modified Rev. Long's scheme for grant-in-aid to the proposed Sisal Institute for training of the villagers in sisal craft at Ahmednagar which has since been approved of by Government. He examined the Shrigonda plantation of Agave and reported on its development. He also visited Kamshet plantation and reported on the utilisation of the area there. At the request of Sir Mohamed Yusuff Trust the Pawai plantation was visited and a scheme

for the starting of a small plantation and factory to develop the industry and to train people was prepared and furnished to the proprietors of the estate.

50. **Village Oil Industry.**—Due to late receipt of Government orders and delay in the completion of the Workshop, no work was done on this experiment during the year. It will, however, be taken up during the next year.

51. **Industrial Chemist's Laboratory.**—The Industrial Chemist's Laboratory sanctioned by Government was under construction but could not be completed before the close of the financial year. In the meantime, minor chemical experiments and chemical tests and other investigations were carried out, as before, at the Royal Institute of Science during the year.

Some of the problems handled at the Laboratory so far were in connection with (1) Recovery of Potassium Chloride from bitterns used for the manufacture of Magnesium Chloride, (2) Preparation of Distempers, (3) Preparation of Healds Varnish, (4) Preparation of decolourising clay equal in quality to the foreign clay "Tonsil" now used largely in oil refineries in India, (5) Investigation for the improvement of colour, feel, etc., of handmade blotting papers, (6) Manufacture of Hydrogen Peroxide. As soon as the full apparatus and other equipment are installed in the Industrial Chemist's Laboratory, work in connection with the problems on preparation of oxalic acid, potassium permanganate, salicyclic acid, glue, acetic acid and acetone from alcohol, and dehydrated castor oil, will be taken in hand.

Experimental work to find out the commercial possibility of manufacturing synthetic aromatic chemicals such as Terpineol, Nerolin Yara, Benzyl Acetate, etc., will also be carried out.

52. **Nicotine and Nicotine Insecticides.**—The Cigarette Factory referred to in the last Year's Report which had put up a pilot plant for the manufacture of Nicotine did not work successfully during the year under report. The Industrial Chemist of this Department paid a visit to the factory and discussed the matter with the proprietor of the concern, and offered to render him all possible technical help for the improvement of the product. Further experiments in this direction would be undertaken in the laboratory of this Department to improve the produce to fetch a high price and if it proves successful the Cigarette Factory in question will be advised to go further into the matter.

53. **Cashewnut Shell Oil.**—Work in connection with the cashewnut shell oil was continued in the Laboratory by a chemistry scholar of this Department during the year under report.

54. **Peppermint oil.**—Mention was made in the last year's report that the analysis of the peppermint oil produced at Gadag made by some foreign firms proved it to be of somewhat inferior quality due to less percentage of menthol, though the plants were grown under different conditions. Though the aroma and yield of the oil were satisfactory, the menthol content was rather poor. In view of this, the party at Gadag did not continue experiments in this line during the year under report. The party is, however, anxious to continue the experiments if it can procure rootrunners of Japanese variety which is supposed to contain a large percentage of menthol and approached this Department for the necessary help in the matter. Further action is being taken in the matter by this Department.

55. **Lime or Lemon oil.**—The results of the investigations and the work carried out by Dr. M. S. Patel and his student at the Royal Institute of Science, Bombay, and at one of the big plantations in this Province have been embodied in a bulletin published by this Department entitled "The Production of Lime Oil and Calcium Citrate in the Province of Bombay" during the year under report. The investigation has resulted in the establishment of the first commercial plant for the production of lime oil and Calcium Citrate in this country. This plant has worked successfully during the last two seasons and there was a great demand for the products in United Kingdom and other European countries. The party at Utran was given the necessary instructions by one of the chemists of this Department for the manufacture of Calcium Citrate during the year under report.

Another party interested in this Industry approached this Department for rendering him the necessary help in the matter. One of the chemists of this Department was deputed to assist him and the still of this Department was given to the party on loan. Samples of oil produced by the party were sent to various European firms abroad for opinion. The remarks of these firms showed that the oil produced semi-commercially at Anand was equal in quality to the oil produced at Utran on a large scale. The party will put up a commercial plant for the production of lime oil during the next season. It is hoped that this development will make lime plantations a paying proposition in this Province.

Work in connection with the preparation of citric acid from Calcium Citrate is in progress and a pilot plant will be set up as soon as the Industrial Chemist's Laboratory is fitted up.

CHAPTER IV.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES.

HAND WEAVING INDUSTRY.

56. The various peripatetic and other institutions mentioned in the last year's report continued to work satisfactorily during the year under review. In addition, two new dyeing and printing demonstrations and one wool weaving school sanctioned by Government last year had also worked during the year.

57. **Weaving Schools for "*bona fide*" weavers.**—All the five schools, with the exception of that at Kamatgi which did not fare well due to lack of co-operation from the local weavers, worked satisfactorily in the different centres where they were located. They were able to introduce 118 fly shuttle looms and 95 dobbies amongst the weavers during the year.

58. **Weaving Schools for Agriculturists.**—One of the two schools worked at Murgod till May 1938, after which it was transferred to Honavar in the Kanara District. The school turned out in January 1939, 10 agriculturists on completion of their training and admitted another batch of 10 students in February 1939. The staff of the school also rendered assistance in erecting looms and demonstrating methods of producing designs at the Coir School conducted at Honavar by Mr. Kallapur.

The second school was stationed at Yadwan in the Thana District till November 1938 where 15 looms were introduced. It was then transferred to Anjalav, Dhumadia Falia, Taluka Bulsar, District Surat, at the request of the local leaders and recommendation of the Collector of Surat, where it aroused considerable interest from the very beginning and its work was much appreciated by visitors. The first batch of 10 students was under training in the school when the year closed.

59. **Cotton Weaving Demonstrations.**—The location during the year of the seven cotton weaving demonstrations maintained by the

Department and the number of fly shuttle looms introduced by them were as shown below :—

Division.	District.	Place.	No. of fly shuttle looms introduced.
Southern Division ..	Dharwar ..	Hubli ..	11
Southern Division ..	Bijapur ..	Guledgud ..	6
Southern Division ..	Belgaum ..	Belgaum ..	12
Central Division ..	Satara ..	Karad ..	13
Central Division ..	Satara ..	Talye ..	1
Central Division ..	Satara ..	Nerli ..	2
Central Division ..	Poona ..	Manchar ..	....
Central Division ..	Sholapur ..	Valsang ..	8
Northern Division ..	Ahmedabad ..	Mandal ..	10
Northern Division ..	Kaira ..	Porda ..	13
		Total ..	76

In addition, 27 dobbies were also introduced by these institutions during the year.

It may be mentioned here that the demonstration which was working in the Satara District at Talye and Nerli is equipped with *galicha* weaving frame and newar weaving loom. At Talye some twenty agriculturists received training at the demonstration in Khadi weaving, production of *galichas* and manufacture of newar. The Collector of Satara, who took much interest in the matter, granted advances to local agriculturists from the grant at his disposal, for purchasing raw materials etc.

At Nerli it has imparted instructions in weaving of khadi, *galicha* and newar to some 12 agriculturists. Two looms, one *galicha* frame and 2 newar weaving looms have so far been introduced.

60. **Cottage Sizing Set Demonstration.**—The cottage sizing set demonstration at Kittur referred to in the last year's report continued its working at the same centre during the year under review.

It may be mentioned that training to weavers in the use of the cottage sizing machine designed by the Department continued to be given also in four of the weaving schools referred to in paragraph 57 above.

The question of effecting some further improvements in the machine so as to increase its utility is being examined by the Industrial Engineer of this Department.

61. **Wool Weaving School.**—A mention was made in the last year's report of a new scheme for the establishment of a peripatetic wool weaving school. A new wool weaving school fitted with up-to-date equipment was opened for the first time in this Province at Medleri in the Ranebennur Taluka of the Dharwar District in April 1938. The school provides for a course of training of six months and ten young wool weavers completed their course by December 1938. Another batch of 10 students joined the school in January 1939. The school has been popular since its inception.

In addition to the training imparted in carding by improved carders, spinning by a labour-saving, traddle-driven spinning wheel and weaving on fly shuttle looms with dobbies attractive articles, the school staff also taught the students attending the school and other local kurubars the manufacture of " felt-caps ". Over twenty families took to this art and are reported to be doing well in this direction.

62. **Wool Weaving Demonstrations.**—The three wool weaving demonstrations reported last year were continued during the year under report. Their activities are detailed below :—

(*a*) The wool weaving demonstration in the Southern Division continued its work at Budihal. The Collector of Bijapur offered six scholarships of Rs. 6 per mensem to students willing to join the demonstration from the grants at his disposal. Only four students came forward to avail themselves of this offer from February 1939, and they were undergoing training with other weavers. The demonstration introduced one fly shuttle loom, 12 carders and 2 spinning wheels.

(*b*) The wool weaving demonstration which was opened at Wavi in December 1938 introduced there 2 carders, 1 spinning wheel and 4 fly shuttle looms. At the request of the Mamlatdar of Sinnar the demonstrator was sent to Naygaon to assist the wool weavers in setting up their looms. About 12 persons attended the demonstration and received training.

The demonstration was then transferred to Bori in the Poona District in January 1939 where it is working still. Some six weavers are receiving practice on the improved appliances.

(*c*) The wool weaving demonstration which was working at Limdi finished its work there in December 1939. It was then transferred to Miri in the Ahmednagar District for the following reasons :—

The Department inaugurated the scheme for the Marketing of the Handloom (Woollen) Products in Ahmednagar in collaboration with

the North Central Divisional Industrial Co-operative Association, Ltd., Ahmednagar. In this connection the Wool Expert appointed under the scheme, needed the assistance of a demonstrator who can introduce amongst the wool weavers up-to-date attractive designs which have a better demand from the public. The wool weaving demonstration working in the Northern Division was, therefore, as an experimental measure, transferred to Miri in December 1938 where it is working under the guidance of the Wool Expert.

63. **Dyeing Demonstrations.**—The number of dyeing demonstration parties during the year was three, one in each Commissioner's Division. A brief account of the work of these demonstrations is given below : —

(*a*) The demonstration at Khasbag referred to in the last year's report continued to do useful work there. As a result of this demonstration the weavers are no longer limited to a narrow range of shades but are able to use attractive coloured silk and cotton yarn dyed in numerous shades. This has improved and enlarged the demand for their goods with considerable benefit to themselves as well as to the dyers. It is satisfactory to note that a local colour and chemical shop has now commenced stocking dyes and chemicals which were not hitherto available in Belgaum.

During the year at this centre 14 weavers and dyers were taught cotton dyeing and 12 weavers silk dyeing. 3 persons also received training in spray printing, 3 in mica printing and 3 in screen printing. A workman of a wool weaving factory was trained in the dyeing of hosiery goods. A member of the Gramodyoga Mandal of Limb Gao, district Satara, also received complete training in dyeing for a period of 3 months. Similarly, a wool weaver from Lakkundi, District Dharwar, received training in wool dyeing for a month and a half. The demonstrator in charge also rendered technical advice to a dye house in Belgaum which effected improvements in the process of dyeing and spray printing on cotton warp. He similarly assisted a Laundry and Dye Works in Karad village of Satara District in garment dyeing, stain-removing, dry-cleaning, etc. Improved processes of cotton dyeing on a large scale were also explained to a party interested in the same.

(*b*) One of the two new parties was stationed at Ahmednagar where it immediately aroused interest amongst the local dyers who were exorted to take to modern fast colour dyeing and printing. 11 persons began to attend dyeing demonstration regularly. 4 workers of a big dye-house received training in printing for a month. The North Central Divisional Industrial Co-operative Association, Ltd., Ahmednagar, which was arranging to set up its own dye-house deputed its representative for being coached for a fortnight. Besides

regular students, some dyers and a good number of weavers attended the demonstration frequently for instruction in dyeing and printing. The demonstration popularised particularly the dyeing of Naphthol and Indanthrene colours. Wool dyeing was also taught as well as bleaching of yarn and cloth on small and large scales. Much interest was evinced in the centre in printing and students were encouraged to print on small pieces of cloth of their own first in basic colours and ultimately in fast colours. Training was also imparted to them in the preparation of different printing pastes with detailed instructions regarding how to avoid costly mistakes and risk of failures. Designing and making of screen was also taught. One Mr. Muley, who used to import bleached Japanese yarns, was given detailed instructions in bleaching, as a result of which he is now able to bleach yarn himself. He was also assisted in starting printing work in which he has made considerable progress. Printing by rapid fast and rapidogen colours was also taught to another person who was printing largely in chrome colours. An owner of 12 looms manufacturing fancy sarees has now set up a dye-house on a small scale under the supervision and guidance of the demonstrator and has ceased to obtain dyed yarn from Sholapur. An embroidery merchant has been taught dyeing of Indanthrene colours in fast shades, which has greatly added to the value of the articles produced by him.

In addition to the foregoing the demonstrator has successfully solved the problem of dyeing of sisal fibre, used in Ahmednagar for making money-bags, ladies' hats and purses, etc., in fast colours in different shades.

(*c*) The other new dyeing demonstration was located at Bhiwandi in Thana District where there is a good number of handlooms as well as power looms producing high class sarees and bodice cloth. On the opening of the demonstration 19 weavers attended it regularly, 8 of whom, on completion of their training in the dyeing of fast colours on cotton yarns, silk and art-silk, set up small dye-houses of their own. The proprietors of a number of weaving factories and dye-houses also received training in dyeing fast colours on cotton, art silk and silk yarns. Two of them have set up large dye-houses. 21 persons also received training in printing. Persons from Dahisar, Bombay and Kalyan also came and received training in this demonstration and some school boys attended the demonstration during their spare time. The demonstrator was deputed to Ahmedabad for over a fornight to train the students of the Jyoti Sangh there in dyeing and printing and rendered all possible assistance to that body in adopting improved methods.

64. **Expenditure on peripatetic weaving institutions.**—Details of this expenditure will be found in the statement given in Appendix A to this report.

65. **The Government Hand Weaving Institute, Poona.**—Thirty new students were admitted to the Advanced Course and twenty to the Artisan Course during the year. 18 students who passed in the first year Advanced Course were promoted to the second year Advanced Course. At the close of the year the number of students on the roll was 54, of whom 18 and 20 were in the second and first year Advanced Course respectively and 16 in the Artisan Course. 47 students appeared at the sessional examination, 40 of whom passed. Arrangements were made as usual to provide for 6 months' practical training to students who passed out from the Advanced and Artisan Courses in mills, local handloom weaving factories and small power loom factories. During the year under report students were taken on an instructive excursion in the Southern Division to acquaint them with the different processes and machines connected with the textile industry, particularly hand-worked appliances.

The expenditure incurred on the Institute during the year is given in the statement in Appendix B to this report.

66. **Improvements in Hand Weaving Appliances.**—(*a*) The beam system to which reference was made in paragraph 83 of the Annual Report of this Department for 1934-35 was further popularised during the year. As a result, 27 beams were introduced during the year.

(*b*) With a view to helping villagers in adopting a new cottage industry one weaving school in the Central Division at Yeola was equipped with a high speed knitting machine for the production, by hand power, of boot laces, file strings, etc. The demonstration of these machines at the last Industrial Exhibition at Poona aroused considerable interest and six persons received training at the Exhibition stall during the period of the Exhibition. Two of them purchased the necessary equipment after training. Enquiries from several persons are being received about this machine which shows that it is likely to become very popular soon.

The knitting machine can be driven either by hand or power and can be worked by even a boy or a girl of 12 years of age. It can be worked by fastening it to any table or chair. Yarns of cotton, wool, silk or art silk can be knitted on this machine. It is extremely simple to operate and gives production as under :—

1 lb. when using 1 thread of art silk of 120's.
10 lbs. when using 2 threads of cotton silk of 20's.
40 lbs. when using 5 threads of cotton silk of 8's.

CHAPTER V.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES.

TANNING INDUSTRY

67. **Tanning Demonstration Parties.**—During the year under report the Department maintained six tanning demonstration parties. The centres visited by these parties were as shown below :—

Division.	District.	Place.
Northern Division ..	Broach	Kalak.
Northern Division ..	Panch Mahals	Godhra.
Northern Division ..	Thana	Masoli.
Central Division ..	West Khandesh	Kasare.
Central Division ..	Poona	Talegaon-Dhamdhere.
Central Division ..	Sholapur	Malsiras.
Central Division ..	Sholapur	Barsi.
Southern Division ..	Belgaum	Chawat Galli.
Southern Division ..	Belgaum	Nipani.
Southern Division ..	Ratnagiri	Ratnagiri.
Southern Division ..	Ratnagiri	Malwan.

The following is a brief account of the work done by the demonstration parties at each of the centres visited by them :—

68. **Tanning Demonstrations at Talegaon-Dhamdhere, District Poona.**—The work at this centre, which commenced last year, was completed this year. In addition to the common tanning shed, materials for which had been supplied from the special grant and from the grant made by the Collector, tools and appliances were supplied for the use of the chambhars. The shed and equipment were being used by all the chambhars and the tanning work done at the centre showed speedy improvement. After finishing its work here, the demonstration party was transferred to Masoli in Thana District on 16th September 1938.

69. **Tanning Demonstrations at Kalak, District Broach and Panch Mahals.**—At this centre there are about 10 houses of Khalpas. In addition to the Khalpas of the village six others from neighbouring villages also were attending the demonstration and learning work at the

centre. These men were provided with scholarships by the Village Uplift Committee. The Khalpas all worked at the tanning shed that had been constructed for them. This shed was added to during the year by the Collector and the Taluka Uplift Committee. This centre was visited by the Honourable Mr. B. G. Kher, the Prime Minister, who was very pleased with the work that was being done. This demonstration party was shifted to Godhra, Broach and Panch Mahals District, on 15th November 1938. The demonstrator, however, paid monthly visits to Kalak to advise and help the local tanners.

70. **Tanning Demonstrations at Chawat Galli, District Belgaum.**—The work at this centre was continued from last year. This is a large tanning centre with about 35 houses of Dhors, of whom more than 25 households are engaged in the tanning industry. The chief items of output at this centre are bark-tanned buffalo hides and bark-tanned sheep and goat skins. These were being done in a crude manner and no effort was made to either set them or give them a good appearance. The colour of the leather was quite unsatisfactory and the leather was also hard so that it could not be used in the manufacture of any leather goods. Improvements in all these respects were introduced as the result of the activities of the demonstrations. About 22 Dhors attended the demonstrations each day and 16 of them put the demonstrated methods to use. Chrome-tanning of trophies, etc., was also begun to be done at this centre. Various items of tools and equipment have been supplied to Dhors of this centre by this Department. These appliances were being used by the Dhors and the quality of the work consequently improved. Manufacture of leather goods is being done by the Dhors at this centre regularly, and in this industry they were able to have a larger margin of profit by being able to do the tanning and dyeing and finishing of leather themselves. The Honourable the Prime Minister visited the centre and expressed satisfaction with work done here. This party completed its work at this centre and was posted to Nipani, another centre in the same District, on 2nd November 1938.

71. **Tanning Demonstrations at Malsiras, District Sholapur.**—Malsiras is a fairly large tanning centre consisting of 7 houses of Dhors and 5 houses of Chambhars. Although skins were available in large quantities no attempt was made to tan these; only hides were tanned. As a result of the demonstration held at this centre, the output of skins, many of which were well-done, rose from nearly nothing to quite 2,000 skins per month. Some of these were purchased by the manufacturers of roller-skins at Sholapur. The demonstrations were attended by the entire village who soon adopted the methods and processes demonstrated. A grant of tools, etc., was made to this centre. The centre was closed during the year and the party was transferred to Barsi in the same District on 8th October 1938.

72. **Tanning Demonstrations at Ratnagiri.**—The work at this centre was very difficult. There are some 17 houses of Chambhars at this centre who are all engaged in making leather goods but unwilling to tan raw hides. The demonstrations, however, induced them to dye and finish leather used by them which improved the quality of leather goods made by them. The Mahars of the place, of whom there were 8 families, on the other hand, were, however, induced to learn tanning and were given some appliances and tools. The daily attendance at the demonstration was about 12, 9 of whom adopted the methods demonstrated. After the work at this centre had attained a firm footing, the party was shifted to Malwan in the same District on 29th December 1938.

73. **Tanning Demonstrations at Kasare, District West Khandesh.**—This is a very large tanning centre where more than 30 families are engaged in this industry. Bag tanning of hides, which is one of the quickest methods and is cheap, was unknown at this centre. One reason why this method of tanning could not be done by the tanners of this place was that the tanning agent that they used, called Ghatbor, contained a sticky mucilage which closed the pores of the hide and prevented the liquor from oozing through. As a result of the demonstrations bag tanning was adopted as also the tannage of light leather. The demonstrations were attended by 14 persons regularly of whom 11 adopted the methods they learnt.

The tanners of this centre work together in a joint tannery which is about half a mile from the village. They were put to great difficulty as they had no roof to work under. A shed was, therefore, arranged for them by the demonstration party out of the materials furnished by the Collector. In addition to this, tools and equipments were given to them from the grant-in-aid made by this Department. The demonstration was continuing its work at this centre at the close of the year.

74. **Tanning Demonstrations at Masoli, District Thana.**—There are about 25 families of Chambhars at this centre. They are all very poor but because they are Chambhars they are able to augment their small income from tanning by the manufacture of leather goods like mots, chappals, etc. The Chambhars attended the demonstrations regularly and showed much interest. The work at this centre had to be temporarily discontinued as the demonstrator was taken up as a foreman at the Government Tanning Institute, Khar, but will be resumed soon.

75. **Tanning Demonstrations at Barsi, District Sholapur.**—This is a very large tanning centre with over 50 people engaged in the industry. The main tanning work done here is on hides, both buffalo and cow. Although there is a local demand for skins, and the bark and other materials for tanning are also available locally, no sheep or goat

skins are tanned as the Dhors are not familiar with the tanning of skins. As a result of the demonstrations the production of light leather increased as well as the output of skins which rose from nothing at all to about 1,200 sheep and goat skins per month. The quality of tanned hides also improved. About 15 people attended the demonstrations daily and 9 of them adopted the methods and processes demonstrated. A grant of tools, etc., was made to the Dhors. The work at this centre was continued at the end of the year.

76. **Tanning Demonstrations at Nipani, District Belgaum.**—This is a very large tanning centre with over 60 houses of Dhors and Chambhars. The main output from this centre is buffalo hides and heavy cow hides. There was a great deal of trouble because of scarcity of water, but the work was progressing satisfactorily. The demonstrations are being attended by nearly 40 people each day and 11 have already adopted the improved methods and processes demonstrated to them. The work at this centre had not concluded when the year closed.

77. **Tanning Demonstrations at Godhra, District Broach and Panch Mahals.**—This is also a very large tanning centre. At one end of the town, tanning is done on a fairly large and commercial scale in about 12 large tanneries. The proprietors of these tanneries are Ghanchis and the workers are Khalpas. At the other end of the town there is a Khalpawadi where tanning is done by very poor Khalpas on a very small scale. These very small tanneries—if they may be so called—are owned by the Khalpas and are situated close to their house. The output is very small and very poor in quality. Many of the Khalpas in the Khalpawadi work in the large tanneries at the other end of the town on daily wages. The demonstration party worked near the larger tanneries for a time and were attended by both the workers and tannery-owners all of whom have profited thereby. The demonstration was afterwards shifted to the Khalpawadi, the attendance at one time being as many as thirty people. It continued here when the year closed.

78. **Tanning Demonstrations at Malwan, District Ratnagiri.**—Although this is not by itself a very large centre Chambhars from the neighbouring villages came to the centre and attended the demonstrations. There was an average attendance of about 20 daily. The demonstrators are still working at this centre.

79. **Work of the Demonstrators.**—In addition to the work on raw hides and tanning, the demonstrators this year made a beginning with the disposal of dead cattle of the village they were demonstrating at, showing how to recover, if and where possible, tallow, meat manure, bones, hides,

skins, etc. The following table gives the number of dead cattle the disposal of which was seen to by the demonstrators at each centre :—

Centre.	Average number of dead cattle per month.
Talegaon-Dhamdhere	6
Kalak	5
Malsiras	6
Ratnagiri	18
Kasare	4
Masoli	13
Nipani	25
Malwan	12

The correct flaying of the carcasses was also demonstrated and wherever possible the hide or skin was tanned straightaway so as to secure good results.

When cattle die in the villages they are generally dragged by the tail to a spot outside the village limit to be flayed, cut up and disposed of otherwise. Half the hide is thus badly damaged and rendered almost valueless to the tanner. Since a very substantial proportion of Indian hides and skins are derived from " dead " as distinct from " slaughtered " animals, the huge economic loss involved in dragging carcasses can be readily understood. It is satisfactory to note that at the suggestion of this Department handcarts for the disposal of dead cattle are being used in one district and it is hoped that the other districts will do likewise with the least possible delay.

Technical advice given and other assistance rendered.—A number of people interested in the trade consulted the Department and advantage was taken of the facilities available at the Tanning Institute to explain the processes that were suggested to them.

Useful advice and information were also given to the St. Xavier's College, Bombay, regarding tanning of skins with hair on, and to the Provincial Marketing Officer on the grading of hides and skins. A note on the tanning industry in Bombay was prepared for the Bombay Economic and Industrial Survey Committee.

The Assistant Director of Industries, Sind, sought the help of this Department regarding the starting of a Tanning Section in Sind. In addition to outlining the whole scheme, the appliances and equipment required for the purpose were also purchased by this Department.

80. **Publications.**—The Kannada and Gujarati translations of the bulletin on Flaying issued last year, were reprinted during the year.

81. **Expenditure.**—Details of expenditure on the peripatetic demonstration parties during the year under review are given in Appendix C.

CHAPTER VI.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES. (Contd.)

PART A.—COTTAGE INDUSTRIES OTHER THAN HANDLOOM WEAVING AND TANNING.

82. In addition to the work of the Department for the development of handloom weaving and tanning industries as described in Chapters IV and V, the Department also extended its activities to some other cottage industries as named below :—

(1) Cane and Bamboo Work.
(2) Lacquer Work.
(3) Coir Manufacture.
(4) Art-Crafts.
(5) Potteries.
(6) Seri and Ericulture.

A brief account of the work done in this connection by the Department is given below :—

83. **Cane and Bamboo Demonstration.**—The demonstration continued its work at Dharwar during the year up to third week of March 1939 when it was transferred to Hubli. The students attending the demonstration at Dharwar were taught to manufacture different types of cane articles such as office chairs, easy chairs, round chairs, stools, tea-poys, flower baskets of different patterns and sizes, bags, waste paper baskets and other useful household small or big articles. Fourteen students attended the demonstration at Dharwar and completed the course. Some persons casually attended the demonstration for advice and guidance in their work.

The demonstration on completion of its work at Dharwar was opened at Hubli on 20th March 1939 where it is working with a fresh batch of students.

84. **Expenditure.**—The expenditure on and receipts from the Cane and Bamboo Work Demonstration during the year were as detailed in Appendix D.

85. **Lacquer work Demonstration.**—A reference to this demonstration was made in paragraph 94 of last year's report stating that one Head Lacquerware Manufacture Demonstrator and one Assistant Lacquerware Manufacture Demonstrator were deputed to Mayo School of Art, Lahore, for receiving necessary training in superior types of Lacquerware Manufacture. These demonstrators finished their training in March 1939. The demonstrators also visited Hoshiarpur for study in the class of

manufacture in one of the main centres of Punjab. After their return to Bombay the demonstrators were sent to Poona where they organised the Demonstration to begin with their work. About 30 lacquer workers are in Poona and it is expected that the demonstration will serve a very useful purpose there.

86. **Expenditure.**—The expenditure on the Lacquer work demonstration and receipts from it during the year under report were as detailed in Appendix E.

87. **The Coir Manufacture School.**—The Coir Supervisor, under the scheme sanctioned by Government for the establishment of a peripatetic Coir Manufacture School, was appointed in October 1938. Two handloom weaving masters of this Department who had been reported in last year's report to have been deputed to the Shri Krishna Vilasam Industrial School, Paravur, for receiving the necessary training in coir manufacture, completed their training and returned after visiting the main centres in Travancore for the Coir Industry. The equipment etc. for the Coir School was manufactured at Travancore and the Coir School was started in Malwan, Ratnagiri District, with 31 students in January 1939. A suitable curriculum was framed up for imparting instructions in retting of cocoanut husks, extraction and willowing of fibre, spinning of coir yarn, dyeing of coir yarn, weaving of coir mattings and mats, manufacture of fibre mats, warping, dressing of mats, braid making, spooling, etc.

The school aroused considerable interest from the beginning and in addition to hereditary coir workers, students of a local High School also showed interest in the industry. The Principal of the High School represented their case to this Department suggesting to make some arrangements for them as part-time students to enable them to attend the Coir School during their off hours. The request was acceded to and five students were given admission, by arranging special morning classes for them. In order to encourage elderly local workers in this industry to adopt improved tools, an extra class was arranged on two occasions where these persons—22 in number—attended and were given demonstration in the use and benefit of the improved spinning wheel.

The samples of coir yarn, coir mats and mattings manufactured by the students were exhibited at the Fifth Indian Industries Fair, Bombay, and the Industrial Exhibition, Poona, where they attracted the attention of many visitors.

The Coir Supervisor besides assisting the staff in organising the school at Malwan, has so far carried out a survey of important centres connected with the Coir Industry in the Ratnagiri, North Kanara and Kolaba District areas. He visited 17 villages in Ratnagiri District, 23 villages

in the Kanara District and 6 villages in the Kolaba District. The number of coir workers in the three districts is estimated to be about 2,300. A few spinning machines of crude type are in use in the villages of Gangavali, in Kanara District and Achra, Malwan and Shervda in the Ratnagiri District. The coir yarn produced is very inferior in quality and can only be used for the manufacture of ropes for cording and bandage purposes. Articles like coir mattings and mat are not produced. The existing processes require improvements by regular demonstrations. During his tours for survey work the Coir Supervisor also demonstrated to local coir workers of some villages in the Ratnagiri District the advantages of improved methods in retting the cocoanut husks so as to obtain fibre of better colour and quality.

At some villages of Kanara District, visited by him for survey, the Coir Supervisor demonstrated the modern method of soaking the cocoanut husks and explained to the coir workers the advantages of employing the improved spinning wheel in the manufacture of coir yarn. Advice and directions for the manufacture of the improved spinning wheel were also given.

He also visited the Honavar Coir School established by the All-India Village Industries Association and gave advice for necessary improvements in the fitments for the manufacture of coir matting, and suggested the use of a warping machine and furnished an estimate and plan for its manufacture. The use of a willowing machine was recommended to produce better fibre and to facilitate spinning work. The master of the school was also given instruction in the correct method for dyeing coir.

The coir workers of some villages in the Kolaba District were given instructions by the Coir Supervisor in the proper method of retting the cocoanut husks for producing better quality of fibre.

The Coir Supervisor has yet to complete his survey work at several more places in the Province.

88. **Expenditure.**—The expenditure on and receipts from the Coir Manufacture School during the year under report were as detailed in Appendix F.

89. **Scheme for training for Hereditary Art-crafts Workers.**—The scheme provides for the award of 10 scholarships of Rs. 30 per mensem to hereditary art-craft workers of this Province to enable them to receive up-to-date training for two years at the Reay Art Workshop under the Sir J. J. School of Art, Bombay, from June 1938. The ten students who had been selected—*vide* paragraph 96 of the last year's report—were admitted to the Reay Art Workshop in June 1938,

The details of the number of students selected for the different crafts and the places they belong to are given below :—

Number of students.	Craft pursued.	District.
3	.. Gold smithy ..	North Kanara, Dharwar and East Khandesh.
1	.. Wood carving ..	Surat.
2	.. Sandalwood Carving .	Surat.
2	.. Carpentry ..	Belgaum and Nasik.
2	.. Sandalwood and Ivory Carving ..	North Kanara.

They are expected to complete their training by June 1940.

The post of Artist Designer, sanctioned under the scheme, was filled up in March 1938. This officer, soon after his appointment, made a study tour and surveyed the wood carving industry including sandalwood, ivory carving, inlaying and lacquerwork, as practised at the following places :—

Surat, Poona, Gokak, Bhatkal, Honavar, Kumta, Siddapur, Sirsi, etc.

It was found necessary to divert the rich skill of the artisans, who had lost touch with the present changed requirements, towards the production of a wide range of artistic and useful articles. After the survey study of the existing types of manufactures, a few samples of modern artware were designed by the Artist Designer and these were got manufactured in Surat and Karwar. These articles were then shown to local artware dealers and were well commented upon.

The question of affording assistance to the workers in the production of attractive articles suitable to the taste and requirements of a large number of the public and of giving them training in the use of improved implements, was under the consideration of the Department.

In the course of the investigations made by the Artist Designer it was observed that the carvers chiefly at Surat used the costly Malabar sandalwood, while the sandalwood workers in the Southern Division used the Kanara Sandalwood cheaper in price but in no way inferior to the former in quality. The Surat carvers were, therefore, acquainted with this fact and advised to use Kanara sandalwood in preference to the very costly Malabar sandalwood. As the Surat workers are traditionally used to no other quality except Malabar wood a supply of first class Kanara sandalwood was arranged to be made for trial so as to induce them to utilise cheaper wood. The Divisional Forest Officer, Kanara Eastern Division, supplied small quantities from stock at market rates to some workers at Surat. The experiments proved so successful that those workers who

showed reluctance to accept the offer of this Department for a trial of the Kanara sandalwood came forward to take a trial of same. Efforts in this direction were continued.

To assist local wood carvers of the Kanara District, the question of cheaper supply of wood was also taken up. There are some 84 workers in this craft in the Honavar, Kumta, Sirsi and Siddapur Talukas and their average consumption of the Kanara sandalwood per year is estimated at 60, 50, 40 and 40 lbs. respectively. In the opinion of this department it appeared desirable that all these workers should get the requisite quantities of sandalwood at concessional rates. So far as Surat is concerned, it was decided that if after the experiments described above, the workers there replace the costly Malabar sandalwood by first class Kanara sandalwood, they too like the carvers of Kanara area, should be entitled to concessional rates.

The matter was accordingly taken up by this Department with Government for favourable consideration. In November 1938 Government were pleased to issue orders directing that sandalwood should be granted to *bona fide* resident workers in sandalwood at concession rates. The limit of this concession is 84 lbs. per family, if the head of the family buys individually, or 140 lbs. per family, if the head of the family is a member of a local co-operative society of sandalwood workers. The concession at rate fixed was half the market rate to be notified each year by the Conservator in April. This rate, has since been revised to 25 per cent. of the current market rate as per orders of May 1939. These concessions, it is hoped, should help the carvers considerably in their trade.

90. **Potteries Manufacture.**—In the Province of Bombay unglazed and glazed earthenware is extensively used by both rural and urban population. At present there exists in a crude form the village local pottery industry which limits its manufactures principally to unglazed utility articles, such as, containers for cereals and liquid, and kitchenware. It is estimated that over 58 thousand persons are engaged in the village pottery industry as potters and makers of earthenware. There is also a substantial number of dependents who solely depend on these workers. Although the import of glazed earthenwares into Bombay is very large, there is however no factory in an industrially advanced Province like Bombay manufacturing medium quality cups, saucers, plates, etc. A scheme was, therefore, prepared by the Department for investigating the prospects and possibilities of the manufacture of up-to-date pottery ware. The broad outlines of the scheme mentioned above as sanctioned by Government in May 1938, are as under :—

(1) Survey of the areas in which suitable clays occur ; the sampling of clays for tests, and investigations of the approximate quantity available.

(2) Manufacture of glazed and unglazed-ware from collected samples of clay—

(a) Cheap household wares used in the Province which can be made by local potters.

(b) Cups and saucers, plates etc. in a power factory located nearby in an urban area like the city of Bombay.

(c) The estimates for the commercial manufacture of (a) and (b) above and costings of manufacture.

(3) Experimental work in connection with the construction of a wood fired glazing furnace for the use of village potters.

(4) Preparation of detailed estimates for—

(a) Small central factory for mixing and grinding frits and glaze mixes for use by the village potters for the manufacture of the cheaper classes of glazed pottery ware.

(b) A factory in an urban area like the city of Bombay for the manufacture of glazed ware e.g., cups, saucers, plates, etc.

In order to carry out the investigation on the above lines some temporary staff was necessary. A Geologist for survey of clay beds and a chemist for experimental work etc. were sanctioned and provision was allowed for a Pottery Expert to supervise and conduct the experiments on samples of clay, wood-fired furnaces manufacture of porcelain wares and to draft estimates and schemes, etc.

91. **Survey of clay deposits.**—A Geologist was appointed in October, 1938, to survey the clay deposits in the Province. Mr. C. P. Shah, Ceramics Expert of the Bombay Potteries and Tiles Ltd. and Mr. G. P. Ogale of Ogale Glass Works Ltd. also accompanied the Geologist and rendered very useful service in the course of the survey, for which thanks of the Department are due to them. The Geologist finished his investigations and submitted a report on the work done by him which was under consideration when the year closed, pending the completion of tests and experiments on selected samples of clay arranged for at the Bombay Potteries and Tiles Ltd.

Samples from the clay deposits of Jalgaon in Dapoli taluka of Ratnagiri District were tested on a reference from Government, for their suitability for the manufacture of potteryware. Tiles made from these clays by the dust process by pressing in pillow presses showed very good surface indicating that the clays are very fine in texture and specially suitable for making Mangalore type roofing tiles, garden pots and *terra cotta*, red flooring tiles, cheap glazed ware such as pots, toys, etc.

92. **Experiments on glazed pottery.**—Various samples of clay, about 50 in number, collected in the course of his survey by the Geologist, were carefully examined by the Ceramic Expert and those considered suitable for the manufacture of pottery were analysed at the Royal Institute of Science. From these, 17 bodies of various compositions were made and then glazed. With their suitability for glazing thus determined, articles of the following description were produced from the selected clays on an ordinary potter's wheel, since the main object was to develop the manufacture of pottery as a rural industry by simple processes and appliances.

Red ware.—

Unglazed.—Garden pots, water pots (*kujas*), drainage pipes, bricks.

Cheap glazed ware.—Tea pots, sugar basins, milk jugs, flower pots, chutney pots, cups and saucers, tumblers.

White ware.—

Unglazed.—Flower pots, *kujas*.

Vitreous ware.—Mortars and pestles, vitreous bowls and chutney pots.

Glazed ware.—White glazed tea pot, sugar basins, milk jugs, cups and saucers, plates, vases.

Samples of clay collected from the following places were tested and analysed and further experiments are now proceeding on them :—

Broach and Panch Mahals District	.. Balatia, Toova Road and Sant Road.
Thana District	.. Gokhara village.
Belgaum District	.. Desur and Kapoli.
North Kanara District	.. Hadinbal (from where China clay is picked up).

Kiln Design.—As mentioned before, the scheme also provides for the design and construction of an efficient wood-fired glazing Kiln suitable for use by the village potters. An experimental furnace designed by the Industrial Engineer was under construction at the works of the Bombay Potteries and Tiles Ltd. for testing when the year closed.

93. **Sericulture and Ericulture Industries.**—Under the scheme for a survey of prospects and possibilities of introducing sericulture and ericulture in this Province, the services of one of the senior Sericultural Inspectors of the Mysore Government were obtained on deputation, but he could not join this Department before the close of the year under

review. He has, however, since carried out a preliminary survey and has submitted a report on the basis of which a scheme for the establishment of a Central Silk Farm and entertainment of mobile staff for demonstration and propaganda for mulberry cultivation and silk-worm rearing has recently been submitted to Government.

PART B—GRANTS-IN-AID TO PRIVATE BODIES FOR THE DEVELOPMENT OF COTTAGE INDUSTRIES.

94. As in the previous year, Government made grants-in-aid to the All-India Spinners' Association and the All-India Village Industries Association for carrying out approved schemes of work for the development of rural industries. The All-India Spinners' Association was, in addition, granted by Government a loan of Rs. 38,000 free of interest, for the same purpose in November 1938, returnable in full at the end of 2 years. The reports of the work done by these two Associations are detailed below :—

95. **Grant-in-aid to the All-India Spinners' Association.**—The allotment and actual appropriation of the amount of grant-in-aid under the different heads were as follows :—

	Allotment.	Actual appropriation.
	Rs. a. p.	Rs. a. p.
1. Grant for Research Workshop	3,000 0 0	3,000 0 0
2. Making and supplying of efficient implements of improved type	3,000 0 0	533 7 0
3. Instructors for introducing new implements and giving training to spinners in the use thereof.	6,000 0 0	5,669 2 0
4. Subsidy on production	20,000 0 0	18,847 10 0
Total ..	32,000 0 0	28,050 3 0

Hand-spinning and production of khaddar in the Bombay Province are being developed in this Province, by the All-India Spinners' Association through its Karnatak, Maharashtra and Gujarat Branches having their head-quarters at Hubli (District Dharwar), Mul (District Chanda) and Sabarmati (District Ahmedabad) respectively. A brief report of the work done by these branches is given below :—

96. **Number of workers benefited.**—The Karnatak Branch had 9 centres in the Districts of Belgaum, Bijapur and Dharwar. The total number of villages served during the year was 323 as compared with 135 during the previous year and the total number of artisans deriving benefit through this activity was 10,126 as compared with 4,228 during the previous year. The Maharashtra Branch carried on work at 16 centres

located in the West Khandesh, Nasik, Ahmednagar, East Khandesh, Sholapur, Satara, Poona and Ratnagiri Districts and covered 63 villages as compared with 22 villages during the previous year. The total number of artisans deriving benefit through this activity during the year was 1,991 as against only 158 in the previous year. The work of the Gujarat Branch covered 13 centres and the activities extended to 58 villages. The total number of artisans benefitted during the year was 1,683.

97. **Research Work Shop.**—A staff of trained workers carried on the work of improving the old and devising new appliances in the small workshops in the Central Office of the Association at Ahmedabad under the direction of Sjt. Karandikar, the Engineer of Messrs. The Ahmedabad Jubilee Mills Co. Ltd., who has been giving valuable assistance to the Association in connection with all technical problems. The work done during the year is summarised below :—

(i) **Kishan Charka.**—Experiments were made to ascertain the effect of increasing the revolutions of the spindle by increasing the diameter of the bigger wheel of the Kishan Charka on the speed of spinning. The diameter of the wheel was increased from 7″ to 11″ so as to increase the revolutions of the spindle to 200. It was found that the speed increased by 10 per cent. whilst spinning yarn of 16 to 20 counts.

(ii) **Slant spindle.**—Experiments were made to ascertain what effect a slant position of the spindle would have on the speed of spinning. Special adjustable spindle holders were prepared to enable the spinner to adjust the spindle at different inclinations. Spinning tests were carried on by expert spinners on the vertical and horizontal wheels and it was found that this arrangement lessened the strain in drawing and increased speed by effecting saving in the time taken in winding.

(iii) **Bow Wheels.**—An arrangement has been devised for attaching two wheels of the Kishan Charka on the handle of a carding bow, so that the same can be used both for carding and spinning. The Dhanush Charka was found to be useful and convenient to workers who want to carry the spinning wheel and carding bow along with them while travelling.

(iv) **Conical Flange Pulley.**—Experiments were made with spindles fitted with conical flanged pulleys and it was found to work more smoothly as the friction decreased appreciably.

(v) **Paper Bobbin.**—Bobbins capable of being slipped on the spindle for spinning have been prepared from paper. Efforts are being made to improve them so as to give smooth working.

(vi) **Hanker.**—A hanker has been prepared which enables the yarn to be removed from four spindles simultaneously. This hanker has an arrangement of a bell which rings as soon as 210 yards are hanked.

(vii) **Mechanical attachment for slivering.**—A mechanical arrangement to the carding machine manufactured by the Khadi Saranjam Karyalaya has been devised so as to enable the automatic production of slivers from carded cotton and save the time required for rolling the slivers.

98. **Making and supplying of efficient implements of approved type.**—The Karnatak branch made considerable progress in the matter of technical improvement. It distributed 250 new spinning wheels and 800 carding bows and introduced 3,000 speed wheels and 4,000 pulleyed spindles in the old spinning wheels belonging to the spinners.

The Maharashtra branch distributed 1,632 improved spinning wheels, 162 carding bows and 25 hankers.

99. **Instructors for introducing new implements and giving training to spinners in the use thereof.**—The Karnatak branch engaged the services of 10 instructors for effecting improvements in the existing spinning wheels and introducing new ones and giving training to the spinners in carding and scientific spinning. Altogether 9,650 spinners received instructions during the year.

The Maharashtra branch engaged the services of 8 instructors for the above purpose.

100. **Subsidy on Production.**—The All-India Spinners' Association has adopted the general policy of effecting a progressive increase in the wages of spinners, and in accordance with this policy, the Karnatak branch increased its scale of wages from two annas to two and a half annas for a working day of 8 hours during the year, while the Maharashtra branch increased its scale of wages so as to enable an ordinary spinner to earn four annas and an efficient spinner six annas for a working day of 8 hours.

During the year, the Karnatak branch produced yarn weighing 97,331 lbs. valued at Rs. 62,163 and Khadi measuring 2,14,261 sq. yds. valued at Rs. 1,09,069. An amount of Rs. 44,453 was distributed as wages to the village spinners and other artisans. The production of Kambal could not, however, be carried on according to estimates, the total number of Kambals produced being only 332.

The Maharashtra branch was able to secure the production of yarn weighing 22,525 lbs. valued at Rs. 25,371, Khadi measuring 36,500 sq. yds. valued at Rs. 20,531 and distributed Rs. 22,250 as wages to village spinners and other artisans. 1,436 blankets were also produced during the year.

The Gujarat branch produced yarn weighing 11,260 lbs. valued at Rs. 23,428 and khadi measuring 35,767 sq. yds. valued at Rs. 22,348 and an amount of Rs. 19,705 was distributed as wages to spinners and other artisans.

GRANTS TO THE ALL-INDIA VILLAGE INDUSTRIES ASSOCIATION

101. Under Government Resolution, General Department, No. 9101 of 15th September 1938, Government sanctioned a total grant of Rs. 24,265 to be expended on eleven industrial schemes proposed by the above Association.

The following are the figures of expenditure sanctioned by Government, the amounts drawn by the Association and the amounts actually spent against each scheme :—

	Expenditure sanctioned by Government.	Amount drawn by the Association.	Amount actually spent by the Association.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
(1) Training in paper-making ..	1,350 0 0	1,350 0 0	994 2 0
(2) Training in oil-pressing ..	900 0 0	900 0 0	415 0 0
(3) Training in button-making ..	450 0 0	450 0 0	382 6 6
(4) Training in the manufacture of gur from date-palm juice.. ..	11,700 0 0	6,500 0 0	5,622 10 9
(5) Training in coir industry ..	2,585 0 0	2,585 0 0	2,838 3 1
(6) Training in the manufacture of articles from horn	1,400 0 0	1,400 0 0	1,393 1 4
(7) Introduction of improved type of "Ghanis"	800 0 0	800 0 0	480 0 0
(8) Setting up of bullock-driven flour mills	1,000 0 0	1,000 0 0	1,000 0 0
(9) Grant for the development of hand-made paper industry ..	2,580 0 0	2,550 0 0	2,427 1 6
(10) Cost of publication of leaflets ..	500 0 0	250 0 0	237 8 0
(11) Cost of administrative work ..	1,000 0 0	1,000 0 0	740 8 9
Total ..	24,265 0 0	18,815 0 0	16,530 9 11

Below is a summary of the report furnished by the Association on the work done on the above schemes during the year.

102. **Training in paper-making.**—Fifteen scholarships for receiving training at the school for village workers conducted by the All-India Village Industries Association were sanctioned for this purpose. Out of 68 applications received, 15 candidates were selected but only 12 received training. A sum of Rs. 994-2-0 was spent on this account against the sum of Rs. 1,350 sanctioned.

103. **Training in Oil-pressing.**—Similarly, 10 scholarships were sanctioned for this purpose. Of the 10 persons selected only 6 underwent the training. A sum of Rs. 900 was sanctioned for this purpose, out of which only Rs. 415 was spent.

104. **Training in Button-making.**—There exists in the forests of Honavar Taluka a species of palms known as "talipots". It is estimated that these trees yield annually an average of 50 tons of what are supposed to be "ivory nuts" of commerce. Except for a small quantity of these nuts, which is used by the local Gudigars (sandalwood carvers) for making beads, all the rest go to waste.

Syt. S. K. Kallapur of the All-India Village Industries Association demonstrated that the nuts could be made up into satisfactory buttons. At the request of the All-India Village Industries Association Government granted a sum of Rs. 450 for imparting training in button-making and a class was opened in November 1938 to teach the manufacture of button with a button-making machine purchased for this purpose from Vinayashram of Guntur. The services of an instructor were also obtained who remained in charge of the class till the 1st of March when Syt. Manges Narayan Prabhu, one of the earliest pupils took over charge.

The number of students trained during the period was 14. They were taught the making of buttons from ivory nuts, horns, bones, ebony, sissum and sandal wood. They were retained in the school until they were capable of turning out 20 buttons per hour. They were also taught the making of coat and sleeve buttons in addition to shirt buttons.

The most popular of all were the shirt buttons made from ivory nuts which were attractive as well as cheap, the plain ones being sold at 2 for Re. 0-0-3 and the coloured ones at 4 for Re. 0-0-8 to Re. 0-0-9 (retail price). Horn, bone and wooden buttons were also turned out in small numbers and were sold at prices varying from Re. 0-1-6 to Re. 0-3-0 a dozen. The expenses for the making of plain buttons would be Re. 0-4-0 for 200.

The students were paid scholarships at the rate of Re. 0-1-6 for half a day. Some of them mastered the art within a fortnight while others took from one month to two months. Those belonging to the caste of goldsmiths learnt the art within the shortest time; the Gudigars came next.

The cheapness of the buttons was their main attraction. Customers came to the doors of the class asking for the buttons. Orders came from places inside and outside the District. But it was not possible to cope with the demand. Three out of those who received training in the school are carrying on the industry independently. They own their machines, and supplement their former incomes with those from the industry taught by us. A space of about 12 sq. ft. and a locally made machine are all that is required for carrying on the industry. The machine costs Rs. 25. It is a cent. per cent. cottage industry which can be carried on during spare hours. It can give to the artisan an income of Re. 0-12-0 to Rs. 1-4-0 a day (assuming that he works for 8 hours in a day and turns out about 200 buttons).

	Rs.	a.	p.
Price of 200 ivory nuts	0	1	0
Lacquer colour for 200 nuts ..	0	2	0
Wear and tear for the machine ..	0	1	0
Extra	0	2	0
	0	6	0

Anything got by the button-maker in excess of six annas goes to his pockets.

A sum of 9 pies for 4 buttons was regarded as a very cheap price. The demand for the buttons is considerable. The raw material is available in plenty. It can be had for the price of its gathering, and the price paid was at the rate of Re. 0-1-6 a paili (300 nuts). But the button-makers would be able to get them at much cheaper rates.

In the beginning, horns were purchased for button-making. But after the horn section of the school commenced working in March, the small pieces of horns thrown away by the horn workers came to be used for button-making. If there had been a small cutting machine, it would have been possible to use up all chips for sleeve buttons, and to sell them at extraordinarily cheap prices.

Sissum wood was not purchased at any time. Bits of this wood, thrown away by the carpenters and furniture-makers, were collected.

It is possible to make coat buttons in addition to shirt buttons from one and the same ivory nut. But this was not attempted for the reason that there was no suitable machine for the drilling of holes into them. Ordinary drills bore but one hole at a time. This takes considerable time. Another difficulty is that the distance of holes bored by such machine is

not uniform. There are machines of German-make which bore 4 holes at one and the same time. These machines save time, and in addition make the distance between the holes uniform.

Even school boys took a fancy for this industry. A few of them studying in the New English School of Honavar used to come to the training class after the closing of their school. They were taught the art and after they learnt it, they were permitted to use the machines. They sold their buttons independently. They used to earn about Re. 0-1-0 for their one hour's work.

This is a new industry that has been introduced in Honavar. The progress was made possible by the local encouragement that was accorded to it. There are few persons in this town and in the neighbourhood who use buttons made outside Honavar.

The following is an abstract of the expenditure incurred for the running of this section for 3½ months :—

	Rs.	a.	p.
Machines and appliances ..	146	6	0
Salary of the instructors ..	115	6	9
Scholarships to students ..	28	14	6
Travelling expenses paid to the instructor	30	6	0
Miscellaneous	61	5	3
Total ..	382	6	6

Assets at the end of the year :—

	Rs.	a.	p.
Machines and appliances	150	5	6
Dead stock	8	7	9
Raw materials	10	0	0
Total ..	168	13	3

A sum of Rs. 19-10-2 was realised from the sale of buttons.

105. **Training in the manufacture of gur from date-palm juice.**—As soon as the orders of Government were received in October 1938, arrangements were made for the opening of classes at eight centres.

The location of these centres and the periods for which the classes were conducted at each centre were as follows :—

Name of the centre.	Taluka and District.	Date of commencement.	Date of closing.
Bordi ..	Dahanu, Thana ..	18th November 1938	28th February 1939.
Kudan ..	,, ,, ..	2nd December 1938	28th February 1939.
Borigaon ..	,, ,, ..	10th December 1938	19th March 1939.
Karadi ..	Jalalpur, Surat ..	25th December 1938	19th March 1939.
Hosur ..	Saundatti, Belgaum ..	21st November 1938	31st March 1939.
Honavar and Dhareshwar.	Honavar, N. Kanara ..	15th November 1938	31st March 1939.
Yadvad ..	Dharwar, Dharwar ..	9th January 1939 ..	24th March 1939.

Permission was also secured from the Manager of the Estate of Sir Mohammed Yusuf for the tapping of brab trees at the Estate at Powai, the Association undertaking responsibility merely for the general supervision of the centre. No financial assistance was given to this centre out of the Government grant.

As in the previous year, the services of three specially selected tappers were obtained through the good offices of Dr. P. C. Ghosh, Member of the Board of Management of the All-India Village Industries Association. They were posted at Bordi in the Thana District, at Karadi in the Surat District and at Yadvad. Unfortunately one of the tappers working at Yadvad died of pneumonia. At the other centres, the services of local tappers were obtained.

At Powai, the work was in charge of Mr. B. S. Kolpe, who had studied the industry in Malabar and who had obtained the services of two tappers from that part of the country. These were proficient in the tapping of brab trees.

Scholarships.—At all the centres, with the exception of the private centre at Powai, students were taken up for being trained in gur-making and scholarships were granted. The number of scholarships granted was 141 and the amount spent on scholarships during the year was Rs.1,690-1-6.

In selecting the candidates for training, particular attention was devoted to the selection of persons who belonged to the professional class of toddy-tappers, and a majority of the students fulfilled this qualification.

The training was of a more systematic type than in the previous year and, as a result, several of the persons trained will be able to set up individually in the industry, if they get the necessary facilities.

No charges were made in the rules which regulate the work of tapping of trees. At the end of the season, suggestions were called for from all the centres for any amendments they considered necessary to enable the industry to be taken up by private individuals, and Government was approached to consider the suggestions that have been put forward separately through the Commissioner of Excise. During the year, at all the centres, the local Excise authorities gave full co-operation to the persons in charge of the training classes, by attending to the suggestions made from time to time. At most of the centres, however, owing to the formalities in applying for, and sanctioning, the grant of licences, nearly a month elapsed before work could actually be started after selecting the centre and taking the trees on lease.

Number of trees tapped.—At a majority of the centres, the juice was tapped from the date-palm trees, only juice trained tappers for brab trees were lacking. Tapping of brab trees was, therefore, done on a restricted scale. Also a smaller number of these trees can be attended to by the tappers than date-palm trees. During the year, special efforts to manufacture gur from the juice of these trees were, however, made at Karadi and Kudan, while, as in the previous year, in the North Kanara District only cocoanut trees were tapped. Although the unit of production was kept at 60 trees, a smaller number of trees was tapped at all the centres, and the number actually tapped from day to day was, on an average, slightly less. The following table gives the number of date-palm trees taken on lease at the various centres :—

Place.	Number.
Bordi	60
Kudan	80*
Borigaon	60
Karadi	54†
Honavar	30‡
Dhareshwar	30‡
Hosur	51
Yadvad	28

* Includes 20 Brab trees.
† Includes 14 Brab trees.
‡ All cocoanut trees.

Expenditure on production.—From the point of view of the producer the main item of expenditure is the cost of fuel. The Association made satisfactory arrangements for the purchase of fuel at cheap rates

at all centres of training except one, where no expenditure was incurred under this head. If Government could assist such producers in getting a cheap or free supply of fuel the cost of production can be kept down so as to compare favourably with the cost of production of gur from sugarcane. Another important item of expenditure is the rent paid for the use of the trees. The expenditure under this head was large at certain centres, viz., Honavar and Dhareshwar in the Kanara and Karadi in the Surat District. At other centres the use of trees could be secured at a nominal rent or free of charge, through the influence of the local workers.

Quality of gur produced.—The quality of the products turned out at the centres was fairly satisfactory throughout the season, spoiled gur being the exception. The product, however, still compares somewhat unfavourably with the corresponding product in Bengal, and with the assistance of the Expert from the All-India Village Industries Association, Wardha, it is proposed to take in hand the work of improving the appearance, taste and keeping quality of the product. Even during the year, some of the centres have attempted to make certain adjustments in the methods of manufacture. Analysis of gur samples from Honavar was carried out at the College of Agriculture, Poona.

Disposal of Products.—In some areas, there was a certain amount of prejudice against the consumption of palm gur, but owing to the propaganda that has been carried on by the Association and its local workers, much of the prejudice was eradicated. Consequently the products turned out found a regular market, except at Yadvad. At some of the centres, the gur was sold in presentable packets or lumps, and at Karadi the Honourable Mr. K. M. Munshi, Home Minister, Government of Bombay, was kind enough to visit the centre and popularise the product. The quantity of gur produced and sold and the prices realised are shown in the table below :—

Centres.	Quantity of gur produced.	Sold.	Price realised.
			Rs. a. p.
Yadvad	Not communicated ..	All quantity produced.	8 11 2
Hosur	1,949 lbs. ..	1,934 lbs. ..	97 4 0
Karadi	1,250 ,, ..	1,014 ,, ..	134 2 3
Borigaon	510 ,,	636 ,, ..	79 9 6
Kudan	440 ,, ..		
Honavar and Dhareshwar .	2,336 ,, ..	2,028 ,, ..	137 13 3
Bordi	1,005 ,, ..	294 ,, ..	36 10 6

Detailed records containing the information to be furnished in accordance with paragraph 2 of Government Resolution No. 9101, dated the 15th September 1938, were maintained by the different centres.

Expenditure.—The amount sanctioned for this scheme was Rs. 11,700 against which an amount of Rs. 6,500 was drawn by the Association. The amount actually spent for this scheme during the year was Rs. 5,622-10-9. The sale proceeds of gur realised during the year amounted to Rs. 494-2-8.

106. **Training in Coir Industry.**—A coir school was opened at Honavar on 15th November 1938. The instructor in charge of the school was recruited from one of the weaving factories of Travancore. There were three sub-divisions in the coir section :—

(1) Spinning.
(2) Dyeing and Weaving.
(3) Rope-making.

Spinning.—A charka was purchased from Travancore and orders for the making of four more charkas were placed with a local carpenter. At first people seemed slow to take advantage of the school but before long they understood the nature of the improvements the charka was bound to bring about. The total number of admissions to the school during November 1938 was 14, of whom 3 were women who were professional spinners. The clamour for admission had since continued unabated. On the 9th January, a branch of the school was opened at Mawinkurve, a village within a distance of one mile from Honavar. On the 9th February, another branch was opened at a village named Nagare. Within a few days of it, branches were opened at two other villages Mugwe and Hosad. The village schools were placed in charge of two women and one young boy who had received training in the school at Honavar. Each of the village school teachers was paid Rs. 10 as salary per month. Thus on 31st March 1939, in addition to the main school at Honavar, there were four village schools, whereas, in the original scheme submitted to Government it had been proposed that after about a month the main school at Honavar itself should be transferred to the villages.

By the end of March, 110 students had received training. Each of the students was paid Re. 0-2-6 a day as scholarship.

According to the scheme submitted to Government only 10 students were to be taken up for training at a time. These ten were to be discharged after being trained for about 15 days. Thereafter, a fresh batch of 10 was to be taken up. In this way, it was proposed to train 120. But, in actual working, it was found that although it was possible for a man to learn the art of spinning within a day, in 15 days it does not become

possible for him to spin more than 500 feet in a day of 8 hours, an out-turn by which he can earn only about Re. 0-1-0 under the most favourable circumstances. The Association thus felt compelled to make a departure from the original plans, and decided to retain the students in the school for some more time until they could spin about 800 feet a day. Otherwise, it was feared that those receiving the training might not pursue it for a living.

When a sufficient number of persons was trained, they were pursuaded to carry on the trade taught to them in the school independently. After a good deal of coaxing, 7 women consented to take a charka to their house and do spinning independently. Arrangements were made to find work for them.

Others were not slow in seeing the advantages of this arrangement. By the 31st of March, there were in all 20 women who were doing spinning independently.

The speed of an average spinner is at present 800 ft. a day of 8 hours (400-500 ft. to the lb.). A few spin 900 ft. in the village of Nagare, some girls were spinning 1,000 ft. in a day.

In order to give them encouragement to spin faster it was announced that a competition would be held in spinning in May on the occasion of the visit of the Honourable the Prime Minister to this place and that a gold medal would be awarded to the best spinner and a few consolation prizes. This had the desired effect.

On 31st March 1939, the school had under its control 41 charkas of the value of Rs. 557, whereas the original scheme provided for the purchase of 10 charkas at an expense of Rs. 150.

The quality of the yarn spun by those who were taught in the school showed considerable improvement. After training, a spinner is easily able to earn annas 2 per day.

At the fag end of the year, an attempt was made to spin thicker yarns (150-200 ft. to the lb.) which are in demand in the Hubli markets. The yarns could be spun, but the spinners complained that the charkas which were being used for the spinning of the finer counts were not suitable for this purpose. Enquiries were, therefore, being made about the kind of charkas suitable for spinning these thick yarns.

Dyeing and Weaving.—These two items were not included in the scheme sanctioned by Government ; but the school gave training in these two arts also. The expenditure on this account was met from the grant obtained from the Collector of Kanara, out of the Rural Uplift Grant.

Rope-making.—Rope-making was also taught in the school. Under the existing system rope-making was done by hand. This process caused a severe strain to the muscles of the hand. The maximum length of rope which a man could make in a day was 120 ft. The problem was how to minimise strain and increase the production.

A small machine was got made locally at an expense of Rs. 15 and 3 men were taken up for training. They learnt the art in 2 days. They were discharged after about 4 days. It is extremely easy to make ropes with the help of machines. The use of the machines can be learnt in one hour. So, instead of taking more students for training, it was announced that the school would thereafter undertake to teach rope-making gratis and would permit the use of the machine free of charge to such as would bring their own raw materials. They were at liberty to take away the ropes made by them and sell them or dispose of them in any manner they chose.

A few students of the New English School, a local High School, also took to this industry during their spare hours, and each earned from Re. 0-1-0 to Re. 0-1-6 for one hour's work. A few poor students were able to pay their school fees with these earnings. It is easy for a regular worker to earn about Re. 0-12-0 a day by day rope-making.

The School had, in all, 4 rope-making machines, purchased at a cost of Rs. 185. Of these four, 2 are very powerful machines with the help of which even riggings for boats can be made. The ropes made in the school were stronger than hand-made ropes, and more durable. They could easily compete in prices with ropes imported from Travancore and Cochin.

Winnowing.—In the scheme sanctioned by Government, provision was made for the purchase of a hand-worked machine. A machine was ordered out from Travancore, but it did not arrive ; nor was it possible to get one prepared locally. The winnowing was therefore done with the help of a few nail brushes.

The results of the work done under this scheme are summarised as under :—

In all 110 women and boys were trained in spinning coir with charkas. Their earnings have increased by 50 per cent. to Re. 0-2-0 a day. Coir yarns of a superior quality are now manufactured in Honavar and the imports of this kind of yarn for the making of fishing nets and for the purpose of stitching plants from Cochin and Travancore have completely stopped. The weaving of fancy coloured matting and coarse coloured as well as plain mattings has been taught and much progress has been made. Some head-way was also made in rope-making.

The total expenses for running the school came to Rs. 2,838-3-1. The sum of Rs. 253-3-1 spent in excess of the amount sanctioned was that by reappropriation from the savings under Gur-making scheme.

The assets at the close of the financial year were as below :—

	Rs.	a.	p.
Raw materials	260	0	0
Colours and chemicals	15	0	0
Machines and appliances	925	10	0
Finished goods	128	8	0
Due in respect of sales of finished goods.	200	0	0
Total ..	1,529	2	0

The school realised Rs. 159-12-0 by the sale of finished goods. The articles of furniture and other dead-stock materials on hand were worth Rs. 100-5-3.

107. **Training in the manufacture of articles from Horns.**— The section for the manufacture of articles from horns was added to the Industrial School of the All-India Village Industries Association at Honavar with the help of a grant of Rs. 1,400 made by the Government of Bombay. Two instructors were got from Cuttack, and they were each paid a monthly salary of Rs. 45 in addition to travelling expenses.

Seven young men were taken up for training. All of these were paid scholarships. A few came to attend the classes, but they were not paid scholarships. They were given free tuition. Of those who were given scholarships, one came from the district of Belgaum. Another came from the District of Dharwar. They were together paid at the rate of Rs. 10 per month. Of the remaining stipendiary students, two belonged to the caste and profession of sandalwood carvers. The remaining were carpenters by profession.

The subjects taught were : the manufacture of handles for sticks and umbrellas ; of walking sticks from horns ; of caskets and presentation boxes ; of soap boxes, snuff boxes and cigarette cases ; of pen-holders and rulers ; of flower vases, cups, spoons and saucers ; and a number of other similar articles, chiefly of turnery. All of these articles were extremely popular. The students showed very great aptitude for learning. The articles were very popular and sold readily. There appears to be a great future for this industry.

An expenditure of Rs. 1,393-1-0 was incurred as shown by the following abstracts :—

	Rs.	a.	p.
Travelling and incidental expenses of instructors.	109	2	6
Salaries of instructors	540	0	0
Scholarships to students	270	0	0
Price of raw materials	47	2	0
Machines and appliances	119	4	0
Miscellaneous	10	0	0
Dead stock	153	3	6
Rents of building	143	0	0
Postage	1	5	0
Total ..	1,395	1	0

108. **Introduction of Improved type of "Oil Ghanis".**—A sum of Rs. 800 was sanctioned for introducing the improved type of oil ghani as designed at the All-India Village Industries Association, Wardha. It was announced that a subsidy of Rs. 40 would be allowed for every ghani. During the year, 12 ghanis at 10 centres were introduced for which a sum of Rs. 480 was utilised. The names of the ten centres are :—Bhusawal, Bodwad, Ghodasgaon, Mamurabad, Chopda, Kasara, Kalwan, Satana, Mazgaon and Kankavali.

109. **Setting up of bullock-driven Flour Mills.**—This scheme was recommended for centres where flour is required in large quantities. The following places were selected for this purpose, and grants of Rs. 200 each were sanctioned :—

Sabarmati (Ahmedabad), Vile-Parle, Ahmednagar, Bhusawal and Bodwad.

Inquiries were made about the most suitable type of *Chakkis* which could be introduced, and after consulting the Director of Industries, Punjab, and other experts, orders have been placed for the last three centres. For the first two centres, *Chakkis* have been already obtained.

110. **Development of Hand-made Paper Industry.**—At the time of submitting the scheme to Government last year, it was estimated that ordinary repairs to the *Karkhanas* at Junnar, Erandol and Ahmedabad would serve the purpose and hence a sum of Rs. 1,000 was asked for, for repairs at these three centres. But, when the work was actually taken in hand, it was ascertained that owing to the dilapidated condition of the *Karkhanas* nothing short of complete repair of the *Karkhanas* would do. Complete repair effected involved a larger expenditure than the amount allotted, but it was met from the unspent amount provided for

repair and replacement of implements, tools, etc. Four *Karkhanas* at Erandol and Junnar and one at Ahmedabad were completely repaired.

The actuals as against the sanctioned estimates of expenditure under different heads were as follows :—

	Actuals.	Sanctioned Estimate.
	Rs. a. p.	Rs. a. p.
(*i*) For repairs to the *Karkhanas* of the Kagadis	2,095 10 6	1,000 0 0
(*ii*) For repairs and replacements of tools and implements of Kagadis	165 0 0	800 0 0
(*iii*) Travelling allowance to Paper Expert and Organisers	75 7 0	180 0 0
(*iv*) Honoraria to Paper Expert and organisers ..	123 0 0	500 0 0
(*v*) Contingency and Postage	18 0 0	100 0 0
Total ..	2,477 1 6	2,580 0 0

The total amount drawn by the Association for this scheme was Rs. 2,550 out of the grant of Rs. 2,580. The unspent balance of the amount drawn was duly credited to Government.

Thanks are due to Syt. Haribhau Phatak, Syt. Sitarampant Sathe, Syt. K. B. Joshi, Syt. Sitaramshet Birla along with his local workers, and to Syt. S. K. Karmarkar, with whose help the work of repairs, etc. was smoothly and economically done.

Along with this work of repairing the *Karkhanas* etc. efforts were made to manufacture hand-made blotting paper, both at Junnar and Erandol, as Government had very kindly agreed to purchase the same, and it is gratifying to note that the production of blotting paper has begun to meet the demand.

111. **Cost of publication of leaflets.**—The Committee decided to publish a brochure on the value of hand-processed food products. The work was entrusted to Syt. Balubhai L. Mehta, M.A., LL.B., of the Gandhi Seva Sangh. The brochure was published and a Gujarati rendering of the same is also ready for publication. A translation of "oil pressing" by Syt. Javerbhai Patel of the All-India Village Industries Association, Wardha, was published in Kannada. The amount of expenditure incurred on publications and translation was as under :—

	Rs. a. p.
Printing	187 8 0
Honorarium	50 0 0
Total ..	237 8 0

112. **Cost of administrative work.**—A grant of Rs. 1,000 was sanctioned for meeting the cost of supervision at the various centres for the execution of the different schemes. The expenditure actually incurred was only Rs. 740-8-9. The details are as under :—

	Rs.	a.	p.
Honorarium for supervising work at Honavar	300	0	0
Travelling and other miscellaneous charges for supervising work in the Karnatak	100	0	0
Travelling and freight charges for participating in an Exhibition in Poona ..	100	0	0
Expenses for students of Amberi Ashram for training in coir industry at Honavar.	80	0	0
Expenses on postage, stationery and clerical assistance at the Bombay office.	160	8	9
Total ..	740	8	9

CHAPTER VII.

WORK OF THE DEPARTMENT FOR COTTAGE INDUSTRIES—(concld).

MARKETING OF HANDLOOM PRODUCTS.

A—Cotton.

113. **The Government of India Grant.**—The Government of India grant received by this Province for the Marketing Scheme for Handloom Products was Rs. 39,000 for the year 1938-39. The expenditure incurred on the Scheme during the year under review amounted to Rs. 31,840.

114. **Working of District Industrial Associations.**—Of the four District Industrial Co-operative Associations at Ahmednagar, Hubli, Ahmedabad and Yeola, which were in existence at the beginning of the year, all except the Yeola Association continued to function satisfactorily throughout the year. The Yeola Association worked satisfactorily only for a few months after its inception in September, 1937, when differences of opinion arose amongst those responsible for the good management of the Association, which created a deadlock in its working. All efforts to compose the differences proved futile, the Joint Board controlling the Marketing Scheme for Handloom Products, consisting of the Registrar, Co-operative Societies, and the Director of Industries, considered the whole situation and resolved to place the Association in the sole charge of

the Marketing Officer (Handloom Products) of this Department with powers hitherto exercised by the Board of Directors of the Association till the election of a new Board of Directors. The Marketing Officer accordingly was in charge of the Association when the year closed. It is, however, expected that the Association will revert shortly to the control of a properly constituted Board of Directors.

Organisation of New Associations already sanctioned.

115. **Sholapur Association.**—This Association started functioning from April 1938 and worked satisfactorily during the year under review.

116. **Malegaon Association.**—This Association started functioning from the middle of July 1938 and worked satisfactorily during the remaining part of the year.

117. **Kamatgi Association.**—This Association started functioning from September 1938. Here an experiment was made in the use of hand-spun yarn by the weavers who were accustomed to using mill yarn for their production but it was found extremely difficult to persuade them to take to this new line of production. The Association has made arrangements with the All India Spinners' Association, Karnatak Branch, for the supply of hand-spun yarn, and also for the sale of cloth produced from hand-spun yarn.

ASSOCIATIONS SANCTIONED BUT NOT ORGANISED.

118. **Bhiwandi Association.**—According to the original orders of Government this centre was to collect a share capital of Rs. 5,000 for the proposed Association. As difficulties were experienced in the collection of share capital, it was decided with the approval of Government, to organise the Association even if a smaller amount was collected as share capital. It was also decided to pay a non-recurring grant of Rs. 2,000 to this Association to serve as share capital. Even with these concessions, the efforts made to organise the Association at Bhiwandi did not meet with success. The Collector of Thana who was requested to state whether the Association could be organised in any other centre in his District also replied in the negative. It was, therefore, decided to organise the proposed Association at Belgaum for Belgaum District, from where several representations had been received in the matter. A reference to this Association is given below.

119. **Dhulia Association.**—Efforts to organise this Association made by the Department in collaboration with the officers of the Co-operative Department and the local Revenue Officers did not prove fruitful. Further attempts are being made in the matter.

120. **Sangameshwar Association.**—Steps taken to organise an Association at Sangameshwar for the Mahar Weavers of Malegaon Taluka, District Nasik, did not meet with success as the Mahar Weavers would rather have cash subsidies in their hands than raw materials at cheap rates as provided for in the scheme of this Department. The local conditions moreover did not seem favourable for the formation and conduct of a co-operative Association by the Mahar Weavers. Efforts made to organise the proposed Association at some other suitable centre near Sangameshwar also proved unsuccessful.

121. **New Associations sanctioned during the year.**—Proposals were sanctioned by Government during the year to utilise the savings arising from the non-organisation of the Bhiwandi Association to organise a new Association at Belgaum. An Association at Belgaum was accordingly organised and registered during the year. It will, however, start functioning in a very short time.

122. **Introduction of New Designs, etc.**—The Textile Designer of the Department visited the Associations frequently to advise them with regard to the manufacture of new designs and patterns. He introduced the manufacture of curtain material with printed warp ; also of handkerchiefs and turkish towels, besides suggesting the manufacture of new qualities in sarees, shirtings, and dhotees with new borders. He has introduced about 40 patterns in shirting, 25 patterns in coating, both cotton and union goods and about 30 patterns in counterpans, bed-covers, door curtains, tea-poy covers, table cloths, etc., etc.

123. **Results of the Year's Working.**—The Associations at Ahmednagar, Hubli, Ahmedabad and Yeola were in existence during the whole of the year. The Sholapur, Malegaon and Kamatgi Associations started functioning from April, July and September 1938 respectively. An idea of the results of the working of the scheme can be had from the statements of figures of membership, capital, turnover and gross profit of each Association for the year 1937–38 and 1938–39 *vide* appendices "G" and "H".

B—Woollen Industry.

124. **The Government of India grant.**—The Government of India grant received by this Province for the Scheme for the Development of Cottage and Small scale woollen Industry was Rs. 13,948 for 1938–39. The actual expenditure incurred on the scheme during the year under review amounted to Rs. 12,347.

Survey of the Wool Industry of the Province.

125. The Wool Expert who was appointed on the 19th April 1938, toured villages in Poona, Nasik, Ahmednagar, Sholapur and Satara

Districts in the Maharashtra and Dharwar and Bijapur Districts in the Karnatak, to survey the woollen handloom industry and to find out suitable centres for its organisation. It was found that the only type of wool fabric produced in the Province was a " Kambal " or " Ghongdi ", very harsh and rough to feel, woven by a very primitive method. Owing to the demand for Ghongdis becoming less and less every year the Ghongdi weaving industry has been hard hit. In the urban areas, the Ghongdi or Kambal as a warm clothing has been practically ousted out, and its place taken up by other types of woollen clothing, either imported or mill-made, such as rugs, shawls, blankets pull-overs, mufflers, tweeds etc. It was concluded, therefore, that unless the traditional wool weaver could be induced to manufacture articles to suit modern taste and requirements he could not hope to continue long in the hereditary occupation.

126. **Details of the Scheme sanctioned by Government.**— The scheme sanctioned by Government provided for effecting improvements in the quality and styles of production and also making arrangements for marketing the same through the agency of the District Industrial Co-operative Associations organised at Ahmednagar and Hubli under the scheme for the marketing of Handloom (cotton) products. The grants and other expenditure sanctioned by Government to these Associations were as under : —

Non-recurring grant—

(a) Rs. 10,000 for bad debts and depreciation of stocks for two Associations, Rs. 5,000 to each.

(b) Rs. 1,000 for the supply of improved appliances to weaver members for two Associations, Rs. 500 to each.

(c) Rs. 1,000 to cover the expenses for the manufacture of new samples for two associations, Rs. 500 to each.

(d) Rs. 400 towards the cost of furniture for two Associations, Rs. 200 to each.

Recurring grant—

(a) Rs. 1,000 to meet the cost of bonus payable to agents to two Associations, Rs. 500 to each per year.

(b) Rs. 2,000 to meet a part of the expenses of finishing for the two associations, Rs. 1,000 to each per year.

(c) Besides the above, a total recurring grant of Rs. 4,240 is provided for both the Associations for their staff, rent, contingencies, advertisement charges and travelling allowance per year.

WORKING OF DISTRICT INDUSTRIAL ASSOCIATIONS.

127. (a) **Ahmednagar Association.**—The work of weaving new types of woollen fabrics was started by the District Industrial Association at Ahmednagar from October onwards on a moderate scale. It may be mentioned here that the manufacture of woollen fabrics to suit modern tastes has to be done on fly-shuttle looms and with the aid of other improved appliances, but this cannot be undertaken on a large scale until a fairly large number of wool weavers are trained to work on fly-shuttle looms. For this purpose a wool weaving demonstration class was started at Miri, Taluka Nevasa, District Ahmednagar, since March 1939, under the guidance of the Wool Expert. The weavers of Miri are receiving here training in the weaving of rugs, blankets, etc., on fly-shuttle looms. The cloth manufactured at the above class was very popular and sold in the weekly bazars of the village even in odd seasons.

EXPERIMENTS IN DYEING, SOFTENING AND FINISHING OF WOOL FABRICS.

The shawls woven at Ahmednagar were dyed and finished by hand-methods and the finished products were very popular and the sale was brisk. Hand-woven rugs were dyed and finished at the Indian Woollen Mills of Bombay and the results obtained in the softening of the fabrics were very satisfactory. Also, Ghongdis woven in Dharwar District were finished at the same mills as an experiment and it was found that the after-process of finishing altogether changes the original rough structure and feel and makes it tolerably soft and full. The superior finish given to these Ghongdis was very much appreciated by the Kurubars or Dhangars and their leaders.

DYEING AND FINISHING PLANT FOR THE AHMEDNAGAR ASSOCIATION.

It is proposed to erect a small finishing and dyeing plant at Ahmednagar to process the grey woollen goods and make them soft and attractive. Government have been approached for the sanction of the necessary grant for the purchase of machinery. The erection of such a plant will be economical as it will do away with the cost of transport in bringing the goods to Bombay for dyeing and finishing and again sending them back to the districts.

WEAVING OF RUGS, SHAWLS AND MUFFLERS, ETC.

Rugs were woven during the year under report at Nayagaon and Wavi villages in Nasik District from hand-spun yarn as per particulars given by the Wool Expert. Some of the rugs were purchased by the Association at Ahmednagar while the rest were sold by the weavers independently at a good price. Shawls worth about Rs. 5,000 were also woven. Other types of woollen clothing material, such as suitings, pyjama cloth, were also woven in a small quantity.

The Ahmednagar Association sold raw materials and finished goods worth Rs. 6,566-2-9 and earned a gross profit of Rs. 599-6-9 during the year.

(b) Hubli Association.—When originally Government had proposed to entrust the work of marketing woollen handloom products to the existing Industrial Co-operative Association at Hubli, a representation was made by the Kurubar leaders requesting Government to give over the work of the scheme to their community. After reconsideration, the work was finally entrusted to the Industrial Co-operative Association, Hubli, from the 1st February 1939.

Arrangements were made for the manufacture of tweeds, coatings, rugs at Ibrahimpur and Darga near Bijapur on behalf of this Association. It was further proposed to open other producing centres of this Association at suitable places in Dharwar and other districts.

128. **Other Activities.**—The advice of the Wool Expert was sought by the Wool branch of the All India Spinners' Association at Mhaswad in Satara District on the methods of hand-milling and finishing. Some Ghongdis and cloth made from the local wool were treated according to his directions and the Manager of the branch reported that the results obtained were satisfactory.

A reference was made to the Department by the Chairman, Union Co-operative Education Society, Ltd., Hulkoti, Dharwar. The Wool Expert submitted his suggestions to the above party for conducting a wool weaving class at the above school.

A firm sought the advice of the Department on the question of re-working of the woollen mills at Ambernath near Kalyan, G.I.P. Railway. The Wool Expert visited the Mills, inspected the machinery and made out a report for the above firm on the condition of the existing machinery and the additions and alterations that would be necessary before re-starting the mill.

129. **General.**—The Woollen industry is the most disorganised and neglected and the shepherd weavers are, as a class, illiterate, pessimistic and, by nature, averse to the adoption of new ideas. The import of cheap foreign blankets and rugs has also added to their distressed condition. The weavers, generally, are unwilling to do anything beyond the limited sphere in which they have been working for generations past. It is an uphill task, therefore, to bring home to them that it is not possible to improve their lot unless they shake off their old methods. The poverty of the weavers, lack of ambition, paucity of selfless and honest workers amongst them, their long standing indebtedness to the village sowkars are amongst the many difficulties that have to be faced. Any substantial and marked progress in the organisation of the wool industry is, therefore, bound to be slow.

CHAPTER VIII.

TECHNICAL AND INDUSTRIAL EDUCATION.

130. **Number of schools.**—The numerical strength of technical and industrial schools in the Province during the year under review was as follows :—

Schools maintained by public and private bodies, aided by the Department ..	25
Government Technical Institutions ..	2
Institutions only recognised by the Department	42
	69

A complete list of these Institutions is given in Appendix I to this Report.

THE COMMITTEE OF DIRECTION FOR TECHNICAL AND INDUSTRIAL TRAINING.

131. **Personnel.**—There was no change in the membership of the Committee during the year under review and the Committee continued to function satisfactorily. The Director of Industries continued to be the Chairman of the Committee. The name of this Committee was changed from the " Committee of Direction for Technical Education " to its present name as per Government orders contained in General Department Memorandum No. 6576-K, dated the 24th April 1939.

132. **Inspection.**—The Teaching Inspector of the Committee inspected all the schools recognised by the Department. This was further supplemented by periodical inspection by the Secretary of the Committee. I also inspected some schools while on tour.

133. **Instruction.**—The courses of instruction offered by these schools will be found in Appendix J to this Report.

134. **Examinations.**—Of the 2,265 candidates who appeared at the annual examinations for 1937-38 held in April 1938, 1,787 or 78 per cent. were successful. Of the above numbers 921 candidates took the final year examinations of the different courses and 714 passed and were awarded certificates.

135. **Grant-in-aid.**—The total amount expended, on the recommendation of the Committee, by way of recurring grants-in-aid during the year was Rs. 38,651 and non-recurring equipment grants

amounted to Rs. 5,673. Particulars of the grants made to the various institutions will be found in Appendix I to this Report.

A non-recurring *pro forma* grant-in-aid of Rs. 768-4-0 to cover the cost of electric installation and a recurring *pro forma* grant-in-aid of Rs. 3,339 towards the rent of the chawl occupied by the School was made to the Narsingrao Shivaji Dharamji Industrial Home for the Blind conducted by the Blind Relief Association.

136. **Recognition.**—During the year the following 9 institutions were granted recognition :—

(1) The School of Radio Physics and Electronics, Poona.
(2) Maharshtra Mudram Shala, Poona.
(3) The Tanning School, Khar, Bombay.
(4) The Zarapkar Tailoring and Cutting Institute, Dadar, Bombay.
(5) The Bhagini Samaj, Bombay.
(6) The Technical Institute attached to the Ferguson College, Poona.
(7) The Chimanlal Nagindas Industrial School, Ahmedabad.
(8) The Jyoti Sangh, Ahmedabad.
(9) The Typography Class at the Vithoba Kondappa High School, Panvel.

In addition to the foregoing, applications for recognition received from the following institutions were under consideration :—

(1) The Mahomed Hajee Saboo Siddik Institution, Bombay.
(2) The Matula Kala Mandir, Bombay.

137. **Miscellaneous.**—A number of enquiries and requests for information, advice and suggestions relating to technical and industrial education and cognate matters was received and disposed of.

A few noteworthy instances in which enquiries regarding the opening of new classes or the formulation of syllabii and other similar matters were dealt with are cited below :—

(1) The Superintendent, Government Industrial School, Amreli.
(2) The Dewan, Sawantwadi.
(3) The Director, School Education, Indore.
(4) The Head Master, M. H. High School, Thana.
(5) Mathurdas Vissanji, Esq., Bombay.
(6) Trustee, Dawood Fazalbhoy Muslim Education Fund, Bombay.
(7) Superintendent, Saraswati Mandir, Sholapur.
(8) Head Master, Popular English School, Satara.
(9) G. S. Khavi, Esq., Poona.
(10) The Secretary, Konkan Muslim Education Society, Bhiwandi.

138. **Expenditure of the Committee of Direction for Technical and Industrial Training.**—A grant of Rs. 15,713-15-0 was made by the Department to the Committee of Direction for Technical and Industrial Training to meet its expenditure during the year under review as shown below :—

	Rs.	a.	p.
(1) Establishment charges ..	4,044	0	0
(2) Inspection charges ..	3,520	1	0
(3) Examination charges ..	8,149	14	0
Total ..	15,713	15	0

A sum of Rs. 2,804-3-0 was received as examination fees, etc., against Rs. 2,970 in the previous year and was credited to Government.

THE VICTORIA JUBILEE TECHNICAL INSTITUTE, BOMBAY.

139. The Standard and number of courses offered by this Institute remained the same as mentioned in the last year's report.

Three hundred and two candidates applied for admission of whom 174 were admitted of which latter 117 belonged to this Province. This manifestly shows that the reputation of this Institute is spreading beyond the confines of this Province. It is interesting to note that there has been a consistently increasing demand for admission to the Electrical Engineering course during the recent years.

The results of the final sessional examinations set out below indicate the very satisfactory progress made :—

Course.	Number of students who	
	appeared.	passed.
Mechanical Engineering	41	39
Electrical Engineering	47	38
Textile Manufacture	23	23
Technical and Applied Chemistry	13	11
Sanitary Engineering and Plumbing	19	19

It is a matter of satisfaction to note that during the year 55 out of 102 students of this Institute were successful in the City and Guilds Institute of London examinations.

140. **Miscellaneous Courses.**—The miscellaneous courses offered by the Institute on Saturday mornings in Elementary Mechanical and Electrical Engineering, Cotton Spinning and Weaving, Electrical Wiremen's and Electricians' work and the by-weekly evening classes in Elementary Principles of Radio Communication, maintenance and repair of Radio Instruments etc. continued to be attended by a large number of people employed in the different trades in the city of Bombay.

141. **Expenditure.**—The total expenditure during the year incurred by the Institute amounted to Rs. 2,66,689 of which Rs. 1,25,000 were as usual given by Government as a grant-in-aid.

THE RANCHHODLAL CHOTALAL TECHNICAL INSTITUTE, AHMEDABAD.

142. **New admissions.**—During the year under review, there were 72 new admissions to the Institute of which 21 were in cotton spinning, 21 in cotton weaving and 30 in Mechanical Engineering courses.

The total number of students on the roll on 31st March 1939, was 124.

A number of private scholarships and 6 Government scholarships of Rs. 10 each were awarded as usual to deserving students during the year.

One hundred and eighteen students appeared at the annual examination in April 1938 of which one hundred and twelve passed. Eight out of 18 students of this Institute passed the various examinations of the City and Guilds Institute of London.

143. **Wiremen's Classes.**—Twenty-three students appeared at the annual examination conducted by the Committee of Direction for Technical and Industrial Training and 17 passed.

144. **Expenditure.**—The total expenditure during the year incurred by the Institute was Rs. 34,146-11-4 and the receipts were Rs. 3,647-7-6 as detailed in Appendix K.

SCHOLARSHIPS.

145. **Government Special Scholarships tenable at the Victoria Jubilee Technical Institute, Bombay.**—Of the 10 scholarships available for award each year to the Intermediate and Backward Classes and Muhammadans 5 were awarded to the Intermediate classes and 3 to Muhammadans and one to the Backward classes.

146. **Scholarships in Technical Chemistry.**—One of the two scholarships awarded in 1937-38 for research work tenable at the Royal Institute of Science, Bombay, was extended for one year more, the other scholar having relinquished his scholarship in February 1938. As it was considered that no useful work will be done in the remaining period of the year, the scholarship for the remaining period of the year was held

in abeyance. Two new scholarships were awarded during the year—both tenable at the Royal Institute of Science, Bombay.

147. **Scholarships in Electrical Engineering.**—The scholarship for practical training in Electrical Engineering awarded in 1937-38 terminated as it was sanctioned for one year only. One new scholarship was awarded during the year under report tenable at the workshop of the Bombay Electric Supply & Tramways Co., Ltd., Bombay.

148. **State Technical Scholarships tenable abroad.**—Three state technical scholarships of £216 each per annum tenable for a period of two years were awarded during the year under review by the Director of Public Instruction, Bombay Province, Poona. This Department also assisted the awardees in obtaining necessary facilities for practical training in factories abroad.

APPRENTICE SCHEME.

149. The progress of the Scheme during the year under review and its present position may be gauged from the following statistical summary :—

1938-39 Session.

1. Number of applications received from candidates seeking admission to the Scheme ..			389
2. Number permitted to sit for the admission examination ..			359
	Bombay.	Ahmedabad.	
3. Number that actually sat for the examination	240	+ 66	= 306
4. Total number of apprentices placed in mills and other industrial concerns ..	175	+ 72	= 247
		mills.	
5. Distribution of apprentices by mills and workshops .. 117 + 58	= 175	+ 72	= 247
6. Number of co-operating establishments.—			
Mills	36	22	
Workshops	13	..	
Presses	3	..	
Chemical firms	1	..	
	53	22	= 75

Under an agreement with the Government of India 12 Engineering Cadets of the Indian Marine Training Ship Dufferin were admitted to

the evening classes of the Government Apprentices Scheme specially organised for them for theoretical training.

The accompanying table shows the total number of apprentices under training at the close of the year ending March 1939.

	Bombay.	Ahmedabad.
1st Sessions, 1938-39	137	55
2nd Sessions, 1937-38	141	54
3rd Sessions Dufferin cadets, 1938-39 ..	12	..
Total ..	290	+ 109 = 399

The Advisory Committee met five times in the year and closely followed the progress of the Apprentice Scheme for which the grateful appreciation of this Department is due to the Committee.

During the year under review this Department submitted to Government definite proposals for the extension of the Government Apprentice Scheme to Sholapur and making necessary financial provision in the current year's budget.

150. **The Government Leather Working School, Khar.**—The Leather Working School, Khar, sanctioned by Government under Government Resolution, General Department, No. 1613/33, dated the 18th October 1937, is housed in its own building at Chamdewaleki-wadi, Khar, Bombay, which was occupied in December 1938. It was visited by His Excellency the Governor of Bombay accompanied by the Honourable the Prime Minister and the Honourable the Minister of Revenue on 25th March 1939. The opening ceremony of the school was performed on 26th March 1939, by the Honourable the Prime Minister.

This Institution is in charge of a Superintendent who was appointed with effect from 16th November 1938.

The first batch of 10 Artisan students from the hereditary workers' class was admitted to the Artisan course of the school in January 1939 and will complete its training in January 1940.

151. **The Government Tanning Institute, Khar.**—In paragraph 89 of the Annual Report of last year reference was made to a scheme for a Government Tanning Institute prepared by this Department submitted to Government. Government sanctioned the Scheme during the year which is intended to be completed in 4 stages. When the first stage of the building construction was completed and the major portion of the building was ready for occupation the office of the Tanning Expert was shifted from Bombay to Bandra on 1st December 1938.

Four students were admitted for an all-round manual course on August 1, 1938, when the Tanning School conducted by the Chamdewaleki-wadi

Committee was taken over by this Department and five more were admitted on 3rd January 1939.

His Excellency the Governor of Bombay accompanied by the Honourable the Prime Minister and the Honourable the Revenue Minister visited the Institute on 24th March 1939.

The Institute was formally declared open by the Honourable the Prime Minister on the 26th March 1939.

The popularity and interest evinced by the public in this Institute is manifestly shown by the donation of scholarships made spontaneously by Mr. Behram N. Karanjia of a sum of Rs. 180 and the offer of Rs. 1,200 made by Messrs. Chemdyes Ltd., for the same purpose. This Department is grateful to them for their generosity.

The 2nd, 3rd and 4th stages of the scheme are still due and the preparation of the plans and estimate for the 2nd stage was in hand when the year closed. Expenditure on this Institute is shown in Appendix L.

CHAPTER IX.

MINES AND MINERALS.

152. As usual, the annual statistics pertaining to Mines and Minerals in this Province were collected by the Department from the various District Magistrates and the Agents to the Governor-General and a consolidated return of the same was prepared and submitted to Government and the Director, Geological Survey of India.

During the year under report prospecting licenses were granted in 5 cases for Bauxite, 4 for Manganese, 2 for renewals for Manganese, 1 for limestone and clay and 1 for China clay and 1 for Iron ores. Mining lease has been sanctioned in 3 cases for Manganese and 1 for Gold and Silver.

This Department dealt with enquiries received from the public in connection with minerals, their places of occurrence, firms dealing with them and so on. The total number of such enquiries dealt with during the year under report was 62 as against 52 in the last year.

153. **Minerals in Ratnagiri District.**—As referred to in the last year's report, the report of the officer of the Geological Department on the survey of economic minerals such as felspar, chromite, etc., was received in this office and Government were advised by the Department to advertise certain areas which appeared to be worthwhile being prospected and to invite applications for prospecting licenses. It was reported that the lessee of the chromite mine in Ratnagiri did not work the mine during the year under report. A party submitted samples of chromite in Ratnagiri which were analysed and the result communicated to him through Government.

CHAPTER X.

FISHERIES.

MARINE FISHERIES.

INTRODUCTION OF POWER PROPELLED LAUNCHES.

154. **Departmental launches.**—The success that has attended the experiment to popularise the use of launches in the fish trade has been most gratifying. The number of launches has shown an encouraging increase from year to year, ever since the inception of the experiment in 1933. A striking feature is the increasing tendency on the part of capitalists to invest in motor launches for the fish trade. The number of launches owned by Government is 4, whereas those owned by private individuals is 5.

The number of launches that operated during the year was 7. The " Shelmari " and the " Sir Frederick Sykes " did not at all operate. Two new vessels namely, " Nooremohamedi " and " Karimi " were put into service during the year. The former belongs to Mr. Thakur the owner of " Chandtara ", a vessel added to the fishing fleet last year. The " Nooremohamedi " was constructed by local carpenters at Vijaydurg. The " Karimi " belongs to the Janjira fishing company. She, too, was built by Indian boat-wrights at Bilimora. The former vessel is equipped with a 72 B.H.P. engine and the latter with a 40 B.H.P. engine.

The utility of the launches to the fish trade may be gauged from the fact that the owner of the " Chandtara " and " Nooremahomedi " has now under construction a third vessel which will be equipped with an engine of twice the B. H. P. of any other engine on the existing launches. Its length will be 55 feet and it will have a 150 B. H. P. Engine, as compared with the length of 24 feet and 10 B.H.P. engine of the vessel with which the experiment started five years ago.

This furnishes evidence of the growing tendency to install larger engines and build bigger boats then those built earlier.

There was, however, an unfortunate mishap during the year when the first disaster to a fishing launch was recorded in our waters. The fishing craft " Cymbria " grounded off the rocks at Kolaba Light House and became a total wreck. Fortunately, there was no loss of lives. The mishap was due to carelessness and negligence on the part of the crew in steering away from the normal course. The vessel was not insured.

The year was unfavourable to the fishermen in more respects than one. Apart from the slack fishing season, a major calamity that overtook the fishermen was the total loss of their stakes planted in the sea at diverse places on the coast. The stakes were swept away by the cyclonic storm that struck the west coast about the beginning of the monsoon.

The fishermen at Danda lost their stakes a second time about the middle of November when a steamer running off its course, fouled the stakes

which were planted within the permissible area. An enquiry was conducted by this Department and a report was submitted to Government.

155. **Benefits of motor boats.**—The steady increase in the number of private launches would have been possible without the realisation by the public of the useful and profitable part played by them in serving an important branch of the city's food supply.

As in previous years, the fishermen at the coastal ports where launches operated realised better prices for their fish and took keener interest in their trade. The fishermen obtained from the sales of their catch over Rs. 55,000, which is about 4 or 5 times as large as they used to get previously. This is an immense gain to the fishermen.

Besides the fishermen, other interests, too, have benefitted from the large quantities of fish brought by the launches to Bombay. They include ice factories, Bombay Port Trust, the Municipality, fuel suppliers and insurance companies. The launches also served to provide more employment to fishermen and fisherwomen, the transport trade and the crew of the launches, not to mention the large number of coolies and motor lorries which are engaged in the transport of a perishable commodity.

Another fruitful outcome of the demonstration afforded by this Department to the fishermen is that other trade interests have also thought it fit to employ diesel engine vessels in place of sail boats for the requirements of the trade. The Bombay Steam Navigation Co. built the " Nur Jahan " and equipped her with a 52 B.H.P. engine. She is being used for the transport of merchandise other than fish, along the coastal ports.

Another private owner built a vessel named " Hilda " for the same purpose. She, too, is equipped with a 25 B.H.P. diesel engine. Both these vessels have been built by local carpenters.

156. **Need for improved fishing methods.**—A scheme for the improvement of fishing methods was drawn up by this Department and placed, as desired by Government, before the Industrial Advisory Board, which strongly recommended the adoption of the scheme. The scheme also received the administrative approval of Government. Orders of Government to enable the department to give effect to the proposals are now awaited.

157. **Fishing season and the fish brought by launches.**—The season, which on the whole was fairly good, started in August which is earlier than usual. Shingala and ghol were the first fish to be brought to the yards for curing. Fishing operations were seriously affected by a severe cyclone in the first week of October which menaced shipping

communications on our coast. The start of fishing operations round about Bombay was, on the other hand, not as promising and profitable as usual owing to the scanty appearance of pomfrets which furnish the bulk of the catch in September and October. The slackness of activities at the fishing sites had their corresponding effect on the city's fish trade, with the result that local fishermen and fish merchants were to a great extent hard hit. Supplies of pomfrets for the market were limited in quantity and their price showed a slight rise, as compared with the average rate for the season in previous years. The comparative dearth in the supply of pomfrets was, however, made up for, by the early appearance of mackerel which struck our coast in October. The catches were satisfactory, but the season soon came to an end on account of strong winds and rough weather at sea necessitating the suspension of fishing operations for some days. The season for such fish as ghol, karli, ishwan, shingala, etc., was a partial failure, but the mackerel season was on the whole very satisfactory and furnished abundant catches at Baitkhol, Majali, Bingi and Chendia. The mackerel catches at Shiroda, Vengurla, Deobag, Malwan and Achra were, however, scanty and the fishermen suffered losses. The season came to an end in February.

There was no change in the field of operations, the launches plying, as in previous years, between Bombay and off the Ratnagiri and Kanara coast in the south and Mudwar, Jafrabad and fishing sites near Diu in the north.

The area round about Harnai, Shrivardhan, Janjira, Murud, Majgaon and Nandgaon in the north was, however, served for the first time by the launches and the months of April and May which are usually unproductive to the fishermen proved to be more fruitful as large catches of black pomfrets were made there and brought to Bombay, thus meeting the demand in the Bombay markets at a time of the year when supplies of fish are low. This area was served specially by the launch "Lord Brabourne" and its presence conferred an unexpected boon on the fishermen. The practice with them till now had been to leave their own rich fishing grounds and work in close proximity to Bombay. This was on account of the difficulty the fishermen experienced in getting their catch away from Harnai, and Shrivardhan to reach Bombay fresh. Their migration towards Bombay used to be more marked in April and May when black pomfrets were in season. This tendency was partially arrested this year when the launches started operating between the above mentioned fishing sites and Bombay. The fishermen who had established their base at Sassoon Dock (Bombay) promptly returned to their fishing grounds, having previously arranged with the launches to take over their catch at the above named places. The result of this move was so beneficial that the fishermen fished for longer hours at night, often remaining 3 or 4 days on the fishing fields, as they knew that their catch

would be expeditiously transported to Bombay. The price which the Harnai and Shrivardhan fishermen realised from the sale of their catch to the launches has been very satisfactory and the fishermen declared that they had had a profitable season.

158. **Fish brought by launches.**—The fish landed by the four departmental launches was much larger in the current year amounting to 8,84,700 lb. as against 5,17,964 lb. in 1937-38. Five private launches brought between them 6,20,889 lb. fish. The total quantity of fish brought by nine launches was 15,05,589 lb. About 1,08,000 lb. of fish frozen at Malwan was brought to Bombay by steamer.

The Bombay Steam Navigation Company's steamers also imported 44,480 lb. of fresh fish from Karachi, Manglore and Devgad. Statistics of quantity and types of fish brought by the launches are set out in appendix M.

The statistics this year have been more complete owing to the incorporation of a clause in the permit issued by the Collector of Salt Revenue, directing the owners of the launches to furnish this Department regularly with particulars of fish, brought by them. The thanks of this Department are, therefore, due to the Collector of Salt Revenue, Bombay.

159. **Fish landing sites.**—A reference was made in last year's report to a scheme that was under consideration of the Bombay Port Trust for the acquisition of land in the Gun Carriage Basin area for the use of the fishing industry. The scheme envisaged the construction of breakwater and the dredging of the basin so as to permit of its use for the fish trade all the year round. There has been no further development and the fish trade at Sassoon Dock continues to experience difficulties in landing and expeditious disposal of fish.

160. **Apprentices.**—The scheme to train apprentices so as to enable them to man the launches continues to receive the attention of this Department. All launches constructed by Government are now manned exclusively by youths of the fishermen's community. The number of youths who obtained certificates from the Mercantile Marine Department is 4. The number of youths who received training is 10. The work of the youths has been satisfactory and their success has served as an example to other youths of the community who are now inspired by the prospects of fresh avenues of employment made available to them in the pursuit of the craft of their ancestors.

161. **Information Bureau.**—This is a very useful limb of the fisheries section The ever expanding scope of its activities is limited only by insufficiency of staff. The bureau attended to inquiries from all over India which covered diverse topics and a variety of subjects. The bureau

helped in a survey of the creeks and estuaries on our coast, carried out by the Salt Department of the Government of India. It also collected and supplied information to the Marketing Officer, Poona, relating to the supply and marketing of fish on our coast and assisted in the compilation of a review submitted to the Industrial Advisory Board in response to its request for such review. This furnished the basis of a discussion by a committee of the Board.

162. **Cold storage facilities.**—The year saw the construction of two ice factories and two cold storage plants in Bombay, one of which is situated to the east of the Crawford Market across the road. This plant will be a great convenience to the fish stalls in Crawford market, which will be enabled to preserve their unsold stock in a fresh condition. The other factory, which is situated at Sassoon Dock and started work in November 1938, will prove to be an inestimable boon to the city's fishing trade in general, as the bulk of the supplies, both by sail boats and launches, is landed there. It will not only meet a long felt want but prove to be an undoubted boon to the fishermen as well. The factory will obviate the present need of obtaining ice from remote centres in the city, thus saving a good deal of time of the fishermen. Further, the quick freezing and cold storage plant will be a welcome facility to the fishermen who will be able to store the catch at any odd hour of the day or night when retail vendors are not on the spot.

163. **Fisheries Schools.**—A scheme to establish two fisheries schools, one at Malwan in the Ratnagiri district and the other at Karwar in the Kanara district was submitted to Government for consideration.

FISH CURING YARDS.

164. **Number of yards.**—The number of fish curing yards at which business was transacted during the year under review was the same as last year, namely 32, 18 in the Ratnagiri District and 14 in the Kanara District.

165. **Fish cured at the yards.**—The principal kinds of fish cured at the yards consisted of mackerel (Bangdas), cat fish (shingala), mushi, karmat, ghol, gedar, dhodi, khawali, pedwa and surmai.

The price of sardine manure went up during the year on account of the decreased catches of this fish. The experience, during the year, of the sardine fishery was to confirm the observation of previous year's, namely that catches of this fish are annually decreasing and that the shoals which formerly struck our coast seem to have changed their migration.

166. **Use of salt earth.**—Sales of salt declined heavily at Kalbadevi, Purnagad, Mumbri, Mithbao, Achra, Talasil and Kochra in the Ratnagiri District and Kodar, Keni, Gangwali, Kumta, Murdeshwar and Shirali

in the Kanara district. Fairly large quantities of fish were no doubt caught at these places, but they were treated with salt earth and disposed of at distant places in the hinterland. Fish thus treated hits the sales at the yards, for although the ultimate product is injurious in view of the indifferent process of curing, its extreme cheapness results in its prompt purchase by the poor consuming public. The Fisheries Inspector and the yard staff impressed on the fishermen the imperative need of resorting to the yards specially built for their benefit as well as the injurious consequences to the public from the consumption of such badly cured fish. With this object in view, meetings of fishermen were held at Mumbri, Mitbao, Achra, Talasil, Deobag and Kochra, when it was explained to the fishermen that the fish is best cured at the yards and that if they did not avail themselves of this facility the maintenance of the fish curing yards by Government would be unnecessary. These meetings have served useful purpose inasmuch as the fishermen at Mitbao have resolved to inflict a fine of Rs. 2 on any fisherman or fisherwoman detected using salt earth to cure fish.

The sales of salt at the fish curing yards have been unsatisfactory and have tended to decline during the past five years due to a variety of factors, the chief of which is that the launches bring to Bombay large quantities of fish which otherwise would have found their way to the fish curing yards. Moreover, the regular service of buses from coastal regions to places in the interior has also contributed to the diminution in the quantity of fish taken to the fish curing yards, as these buses now regularly carry fresh fish from Ratnagiri, Deogad, Malwan, Deobag, Vengurla, Shiroda, Majali, Karwar, Chendia, Harwada, Ankola and Kumta to Kolhapur, Belgaum, Hubli, Harihar, Sagar, Savanur, etc. Also, ice factories established on the coast make the transport of fish by steamers and lorries easier. The cumulative effect of all this is that while the fresh fish trade has expanded the fish curing industry has tended to contract appreciably.

The only remedy to arrest this decline is to improve our present methods of fishing so that more fish is obtained from the sea as otherwise in years to come fish curing industry along our coast will be faced with extinction.

The public too on our coast is complaining that present prices are exorbitant and supplies have diminished on account of the launches. The subject of their complaint is likely to be aggravated in years to come, for, without more supply of fish than at present, they will have to pay increasingly higher prices and at the same time be confronted with inadequate supplies.

167. **Transactions.**—(*a*) During the twelve months ended on March 31, 1939, a total quantity of 224,387 maunds of fresh fish was brought

to the yards, 62,964 maunds of salt were issued for curing fish, 31,489 maunds being issued in the yards in the Ratnagiri District and 31,475 maunds in the yards in the Kanara District as against 51,236 maunds in the previous year. The quantity of cured fish removed from the yards was 166,537 maunds. 33,100 maunds of salt were indented from Uran for the Ratnagiri yards and 28,670 maunds from Sanikatta for the Kanara yards.

The stock of salt at the 32 yards at the beginning of the year was 56,648 maunds and at the close at 32 yards 53,910 maunds.

(*b*) Some fishermen of Boria, Jaigad, Ratnagiri and Manki availed themselves of the concession of taking non-duty paid salt from their respective fish curing yards to preserve their catch at sea. The quantity of salt issued from the above yards was 1,025 maunds, i.e., 987 maunds in the Ratnagiri District and 38 maunds in the Kanara District as against 1,064 maunds in the previous year.

(*c*) 1,778 maunds of salt were issued to agriculturists free of duty from the fish curing yards for manurial purposes. The issue price of denatured salt for manurial purposes remained unchanged, namely, 8 annas per maund.

(*d*) The total quantity of fish brought to the yards during the 12 months was 224,387 maunds.

168. **Opening of new yards.**—Applications for the establishment of new yards were received during the year from the fishermen at Kodibag, Nandangadda in the Kanara District and Mochemad and Palshet in the Ratnagiri District. A favourable view of the applications was not taken, as the Department is of the considered opinion that the increasing number of launches would militate against the prosperity of any new yard that might be opened. Applications for the opening of new fish curing yards will best be entertained after means have been adopted to increase the present haul obtained from the sea by our fishermen.

169. **Reforms.**—*Baitkhol yard.*—This yard was reopened during 1937-38 when only the dry method of curing fish was permitted pending the construction of cement concrete platforms. The department constructed 6 platforms at the Baitkhol yard at a total cost of Rs. 1,024 where fish is cured under hygienic conditions. The platforms prevent much unnecessary waste of salt and help to ensure the production of a more wholesome commodity than before. Convinced of the advantages of the cement platforms, a private fish curer has built one platform at Baitkhol at his own expense for his own exclusive use. The construction of platforms has more than justified the step. The platforms fill a real need and have increasingly been used by the fishermen. So heavy has been the work on the platforms that the fishermen addressed this

department with a request for the construction of 6 more platforms which Government were pleased to sanction during the year. The fish curers at Bhatkal and Murdeshwar have also erected cement platforms and tanks to cure fish instead of doing it on sand in the yard compound. The introduction and use of cement concrete platforms and tanks are due to the efforts of the Fisheries Inspector who has been touring the fish curing yards conducting propaganda on curing fish under sanitary conditions.

The most flourishing yard during the year was the one at Baitkhol, which showed the largest sales of salt. A feature of the yard during the year was the use of " rapan " nets which were totally unknown there before in spite of which there were no fewer than 15 in use at the end of the fishing season. " Rapan " nets were mainly instrumental in the capture of very large quantities of fish, specially mackerel, the bulk of which was transported to Bombay by the launches. The big and remunerative hauls obtained by these nets have led the Karwar Municipality to tax the fishermen to augment the municipal revenue by levying a cess of Re. 1 each time a " rapan " is dragged ashore. The Municipality has not, however, been unmindful of the interests of the fishermen inasmuch as the fishermen are allowed to use the foreshore where the nets are dragged. Moreover, it has resolved to install a kitson lamp in the Baitkhol yard.

170. **Model fish curing sheds.**—Government sanctioned during the current year, *vide* Government Resolution, General Department, No. 2355/33, dated August 15, 1938, the establishment of two model fish curing sheds, one at Malwan in the Ratnagiri District and the other at Majali in the Kanara District where demonstrations of improved methods of curing fish will be given to the fishermen. The sheds are ready and they will be put into use in September by when it is expected that the master fish-curers will have been appointed.

171. **Offences.**—(*i*) Illicit removal of duty-free salt was detected at the fish curing yard at Majali. The case was investigated by the officers of the Salt Department and the curer was debarred from entering the fish curing yard for one year.

(*ii*) A similar case of illicit removal of salt was detected at the Shirali yard and the case is being investigated by the officers of the Salt Department.

(*iii*) At the Majali yard two Mopla fish curers attempted to remove forcibly from the yard compound cured fish without its being examined by the sentry at the gate. The two curers were debarred from using the yard in the Kanara District for a period of one month.

(*iv*) A 12-monthly clerk at one of the yards in the Ratnagiri District was found guilty of misconduct and a breach of the yard rules and his

increment was stopped for six months. Two 9-monthly clerks and two peons who abetted in these acts were also punished.

(*v*) One bag of salt in excess was detected in the consignment received at the Malwan yard by the yard staff. The case was investigated by the officers of the Salt Department and the tindel of the vessel was fined Rs. 5 for theft under Sea Customs Act.

172. **Concession to fishermen.**—In Government Resolution, General Department, No. 9568/33, dated November 14, 1938, Government were pleased to grant to the fishermen and chamars in the Western Forest division of the Kanara District the privilege of removing the bark of Matti trees from the special reserve and minor forests adjacent to their villages during June, July and August at concession rates. The bark is a useful product and is used by fishermen to tan nets.

173. **Inspection.**—The Fisheries Inspector was out on tour of the yards for 153 days. During his tours he impressed on the fishermen the need for curing under sanitary a d hygienic methods. He also addressed several meetings wherein the advantages of co-operation and thrift were explained to the fishermen.

174. **Yard Finances.**—Appendix N gives a *pro-forma* account of the transactions at the various fish curing yards during the year ended on March 31.

Appendix O contains a detailed account of the transactions.

The estimate pertaining to the administration of the fish curing yards for the year had reckoned on a possible sale of 77,000 maunds of salt, but the quantity actually used was 62,964 maunds, due to causes already explained elsewhere in this report.

The net loss from the working of the yards during the period under review was Rs. 5,379.

FRESH WATER FISHERIES.

175. Further attempts were made during the year to stimulate the fresh water fisheries. The success of the experiment was to a great extent retarded by the unusual rainfall last monsoon. The exceptionally heavy rain led to floods and many tanks and ponds overflowed with the result that many fish were washed away or escaped. The fish collected at the end of the dry season in April 1939, were not as large as expected which correspondingly affected revenue derived from their sales.

The greatest difficulty confronting the expansion of the experiment as mentioned in last year's report, is lack of a source of supply of suitable fingerlings that will fatten and breed in the tanks in this Province. To overcome this problem this Department continued the survey of rivers

with a view to discovering such fish as would lend themselves to the purpose of the experiment and attention was concentrated on the Tapti river, perhaps the largest river in the Province, which was explored in all its reaches from Surat up to Bhusaval in East Khandesh. The survey, however, failed to discover any suitable substitute for " catla " fish. The net result of the survey work so far done is that there is no fish that corresponds to " catla " for the purpose of the experiment. The absence of such a source of suitable fingerlings is a grave problem as its effect is to retard the progress of the fresh water fisheries experiment. The only way to solve the problem is to stock convenient rivers with " catla " fingerlings imported from elsewhere, so that in time to come a cheap and independent source of supply in our Province may be established. This object will not, however, be easily attained as it will be necessary to continue stocking the rivers for four or five years in succession with fingerlings. Only such stocking will enable the fish to establish themselves and multiply if they are to figure in the catches of our fishermen. The rivers Ulhas, Moola-Mutha and Tapti are being surveyed with the object of ascertaining whether they will be suitable for the purpose.

Powai lake was stocked in July 1937 with about 8,000 fry of " catla ", Rohu Mrigal specially imported from Patna and Madras. The fish have fattened and grown. An indication whether the fish have bred or not will be afforded in the course of the next monsoon when it is hoped to capture the young ones.

The stocking of tanks with fingerlings of " catla " and Rohu could not be accomplished according to programme, as many of the fry and fingerlings in the consignments ordered during the year from Patna and Madras perished en route. This was an unforeseen disaster, as such losses have not occurred in the consignment of fingerlings obtained from these places in the previous years. The authorities at Patna were however unable to account for this severe mortality. The reduction in the quantity of fry available for distribution compelled this Department to stock ponds and tanks with fry of such local fish as " Lates ".

(1) **Gourami.**—A consignment of 130 fingerlings brought from Madras in April 1937, was introduced in the Municipal tank at Bandra. In March 1938 the fish had grown to about 15" in length. Conclusive evidence that the fish had bred was furnished in October 1938, when fingerlings of about 3" in length were observed. The tank is thickly covered with aquatic vegetation which consequently impedes the removal of the fish from it. The quantity of the fish in the tank can only be estimated at the end of the hot weather when the level of the water decreases to its minimum which will also be the best time to catch the fish.

Fingerlings of " gourami " were also introduced in the Ganeshkhind Fruit Experimental Gardens, Kirkee. The fish continued to thrive

till December 1938, but in the last week of this month it was noted that some serious epidemic had affected them. The eyes developed some disease and the entire lot of fish in the pond perished.

" Catla " fingerlings were introduced in the tank at Bandra along with " gourami " in September 1936. They had grown to about two feet in length before the break of the monsoon in 1938. The tank was under observation throughout the monsoon but no indication was available that the fish had bred in the intervening period.

(2) **Etroplus.**—Some fingerlings obtained from the stock originally introduced in a well at Vile Parle were used to stock tanks elsewhere in the suburbs. The " etroplus " seems to be a fairly vigorous breeder, but is slow in growth. The chief difficulty about the fish is that when it is introduced in wells it cannot be easily netted. The normal nets were found useless and consequently a special trap was designed by this Department, which proved effective for the capture of baby fish from wells.

(3) **Lates.**—There seems to be some uncertainty about the availability of this fish every year. Unlike the previous year, fingerlings were available during the year in good quantities for stocking. About 3,500 of them were collected from creeks at Ghatkopar and were liberated in 5 tanks in the suburb. Many of the fish escaped, however, during the exceptional floods on October 6th, 1938.

The chief drawback about this fish for stocking purposes is the high cost of its fry which varies from Rs. 2 to Rs. 4 per hundred and is thus beyond the means of our agriculturists to pay. This price may be compared with that of fry supplied by the Fisheries Department of Bihar which cost about Rs. 3 per thousand. The high cost of the fry of the " lates " and its rather limited distribution seriously militate against the wider use of this fish for stocking purposes.

(4) **Murrel.**—Fingerlings about 2" to 3" in length of this fish were collected from the Moola-Mutha river in Poona in May 1938, and 295 fingerlings were liberated in a pond at Vile-Parle on June 2, 1938. When the pond was fished on April 14, 1939, 42 murrels were obtained and it was found that the rate of growth had been phenomenal, the fish having grown within ten months from a size of 3" to 19". This amazingly rapid growth encourages the hopes that it might be possible to introduce and breed " murrels " on an extensive scale in the fresh water fisheries in this Province. Before any attempt on an ambitious scale is, however, made to introduce fingerlings of " murrel " elsewhere in the Province it will be necessary to determine how far Moola-Mutha river will be able to provide the required supply of fry. The amount fetched by the sale of fattened " murrels " from the Vile-Parle tank was Rs. 10.

176. **Disposal of Fishing Right.**—The tank in the jail compound at Thana did not yield the amount expected from the disposal of the

fishing rights. The tank was well stocked with fish, namely, 800 " lates " and about 120 " catla " fingerlings and the sum hoped to be realised was Rs. 200, as compared with Rs. 100, in the previous year, when the pond was stocked with much less fish. The amount realised was, however, only Rs. 110 due to the reluctance of fishermen to bid at the auction as they were sceptical about the quantity of fish available in the pond. It is expected, however, that results will be better next year as the fishermen now seem to have realised that the pond is sufficiently well stocked with fish to yield profits. Sales from other tanks stocked by this Department yielded a gross sum of Rs. 189 which is considerably less than the amount expected. The decreased realisations were due to loss of fish consequent on the inundation of all the tanks.

Great difficulty was also experienced in the disposal of the rights to fish in the other ponds stocked by this Department. Fishermen were reluctant to bid at the auction, and though information was circulated to the adjacent fishing villages no fishermen were forthcoming to acquire the rights. The tanks had, therefore, to be fished Departmentally and the catch disposed of in the markets.

177. **Help to Angling Association.**—The Bombay Presidency Angling Association received, as in previous year, assistance from this Department, which supplied it with 2,000 fingerlings of Megalops. The fingerlings which were locally collected by the Department were introduced into the Powai lake.

CHAPTER XI.

WEIGHTS AND MEASURES SECTION.

178. As mentioned in the last year's report the Bombay Weights and Measures Act remained in force and the work of reverification was carried out in the entire Province. The reverification work in Bombay city and the eight Districts in which the Act came into force on 1st August 1935, commenced from 1st August 1937, and in the remaining Districts from 1st March 1938.

179. **Equipment and Laboratories.**—The Standards Laboratory and the Precision Laboratory in Bombay, and the Weights and Measures Laboratories in the Districts were fully occupied and continued to work satisfactorily.

An order to the extent of Rs. 11,910 for new Working Standard Weights and Measures for the additional denominations recognised under the Act was placed with His Majesty's Mint.

180. **Manner of enforcement of the Act—Co-operation of Local bodies.**—The various municipalities, big and small, and the District Local Boards gave their full co-operation in the enforcement of the Act in their respective areas. The area in each District has been divided between the Local Body unit of Weights and Measures and Government unit of Weights and Measures in more or less equal parts from the point of number of traders and the fees collected therefrom so as to make both the units self-supporting. The work of verification and stamping thus assigned and already outlined in the report for 1937-38 was carried out in all the parts of the Province by the Government and Local Body Inspectors side by side in complete harmony and satisfaction.

181. **Prosecutions.**—During the year under report 48 cases of prosecutions were sanctioned against the traders, who either used unauthorised weights, scales, etc., or wilfully decreased the capacity of measures or used unrecognised denominations of weights and measures and who obstructed the Inspectors in the discharge of their lawful duties. Convictions were obtained in 33 cases and the rest remained pending for trial.

182. **Amendment of the Act and the Rules.**—The penal section 34 of the Act was suitably amended in order to facilitate the launching of prosecutions against traders using or possessing for use for trade unauthorised weights, measures, etc. Rules 63, 127 and 134 were also suitably amended in the interest of the trading public. The proposals for new rules recognising multiples and sub-multiples of additional denominations of weights, measures, etc., used in the bullion trade and chemical shops made last year were sanctioned by Government during the year under review.

Further proposals for recognising levelling method as the only authorised method in the use of dry measures and for abolishing the illegal custom of receiving excess measure of commodity in various forms were made to Government during the year, solely in the interest of poor agriculturists. Further, in response to appeals from the trading public, proposals for the reduction in verification and stamping fees by degrees varying upto 33 per cent. of the present fees were made to Government. These proposals were under the consideration of Government during the year under report.

183. **Extent of the enforcement of the Act.**—In all, about 5,60,000 units of weights and measures and about 70,000 units of weighing instruments and beam scales, were reverified and stamped by the Inspectors of Weights and Measures during the year. The inspection of traders' premises and surprise visits to them were regularly carried out by the Inspectors throughout the Province for the effective enforcement of the Act.

The Warden and the two Assistant Wardens also paid alternate surprise and inspection visits to the various districts for the proper application of the Act.

184. **General.**—During the year under report a number of enquiries were received from various Indian States, namely, Patiala, Bhor, Janjira and Mysore, and also from the Governments of Burma and Madras about the Standard weights, measures, weighing and measuring instruments adopted and the working of the Act in this Province.

As per arrangement made by the Central Provinces Government with this Government, this Department has also undertaken to test the Working Standards belonging to local bodies in that Province. The Working Standards of the Municipal Committee, Akola, were accordingly tested during the year under report.

The Chairman of the Weights and Measures Committee of Baroda State paid a visit to this Section to acquaint himself with the working of the Act and to see the Primary, Secondary and Working Standards of weights and measures maintained in the Precision and Standard Laboratories.

185. **Expenditure.**—The expenditure in connection with the enforcement of the Act during the financial year 1938-39 and the two preceding years was as follows :—

Year.	Recurring and non-recurring expenditure incurred by	
	Government.	Local Bodies.
	Rs.	Rs.
1936-37	1,49,145	75,666
1937-38	1,56,818	83,364
1938-39	1,59,031	(All figures not yet available.)

186. **Receipts.**—The receipts credited to Government on account of verification and stamping work carried out by Government Inspectors and the receipts of Local Bodies under the Act during the year and the two previous years were as under :—

Year.	Government Receipts.	Local Body Receipts.
	Rs.	Rs.
1936-37	5,40,000	49,541
1937-38	3,43,643	68,598
1938-39	3,71,054	(Complete information not yet available.)

The income of Government has continued to be high presumably due to the fact that a large number of traders discarded their old weights, scales, etc. on account of the expiry of the period of allowance for the use of old weights and measures under Rule 63 (2) and purchased new ones which resulted in the manufacturers of and dealers in weights and measures getting large stocks of new weights, etc., stamped during the reverification period by Government Inspectors for whom this work is reserved.

CHAPTER XII.

WORK OF THE DEPARTMENT—MISCELLANEOUS.

187. This Department did considerable amount of miscellaneous work not included in any of the foregoing chapters, a brief account of which is given below :—

WORK FOR OTHER DEPARTMENTS OF GOVERNMENT.

188. (1) Approved samples of articles were sent by the Superintendent, Government Printing and Stationery and this Department carried out a surprise check of the articles in stock with the approved samples and a detailed report was submitted to Government. Also, several articles such as drill cloth, inks, gum, typewriter oil, woollen cloth, etc., received from contractors were sent to this Department for test, the results of which were duly communicated to the Superintendent for his information.

(2) Samples of candles manufactured at the Thana Prison were received and analysed, and the results were communicated to the Superintendent of the Prison for information.

(3) Further samples of candles were received from the Inspector General of Prisons for testing, and the results forwarded to the officer concerned with certain suggestions for improving the quality.

(4) Government referred to this Department the question of generating cheap electrical energy at Bhatgar Dam and asked this Department to report whether the power could be utilized for the industrial development of Myrabolans and Bauxite found in the neighbourhood of that Dam. The Industrial Engineer paid a visit to the area, and a detailed report on the utilization of the electrical energy at Bhatgar Dam was submitted to Government during the year under report.

(5) The Director of Public Instruction, Poona, was furnished with detailed estimates of raw materials, equipment, etc., for a handloom weaving section to be organised for vocational classes in the secondary schools at Godhra and later Bijapur and the Department also placed orders for some of the equipment.

(6) The Mental Hospital, Yeravda, was furnished with a detailed plan and estimate for a weaving shed and information regarding the type of equipment, etc., required was supplied by the staff of the Government Hand Weaving Institute, Poona. 18 Frame Flyshuttle looms, 12 Throw Shuttle looms, 12 Tape looms, 38 winding wheels, 24 spinning wheels and 2 warping sets, etc., were manufactured at the Institute under the direct supervision and guidance of the Institute Staff and assistance was given to the Hospital in setting up the equipment and organising the Weaving Section.

(7) Improvements were effected in the dyeing processes in the dyehouse of the Belgaum Central Prison, and dyeing of a fast Khaki shade was introduced which enabled the Prison to dye khaki yarn and cloth.

On the prison starting to weave woollen goods, the dyeing of fast shades on wool was demonstrated to it by the staff of this Department. The Prison had also difficulty in getting a soft finish on the woollen products such as blankets and *Kambals*. Demonstrations on the milling processes of wool were given. As a result of assistance rendered by this Department the Prison was enabled to turn out attractive articles in various shapes.

(8) The Inspector General of Prisons was not satisfied with the count and quality of yarn supplied to him by a firm, and referred the matter to this Department for examination and advice. The yarn was tested and necessary advice was furnished.

(9) The Surgeon-General had referred to Government a complaint from the Superintendent, J. J. Group of Hospitals, Bombay, against the quality of bed sheets supplied by the Criminal Tribes Settlement. On a reference from Government to this Department in the matter a test of approved sample, mill samples, samples of goods supplied, etc., was taken and a report was submitted to Government with suggestions for improvement.

(10) The Surgeon-General on behalf of the Central Mental Hospital, Yeravda, desired to know if it would be possible for any factory to supply Red Turkey cloth as the cloth used is generally foreign and it was understood that no substitute for this quality and dye was available in the indigenous market. Enquiries were instituted by this Department with some important weaving mills likely to be interested in the manufacture and supply of these articles as a result of which one mill undertook to prepare a few sample pieces of the required shade and furnished a counter sample. The Surgeon-General was acquainted with this and advised to open negotiations with the mill.

(11) The question of the possibility or otherwise of purchasing with advantage Indian made clocks and time pieces was referred to this Department for opinion and a report recommending the purchase by

the Superintendent, Government Printing and Stationery, of clocks made in this Province was submitted to Government.

(12) The Backward Class Officer, Bombay Province, Poona, had asked for, and was supplied with, technical advice regarding correct allowance to be made in bed sheets for shrinkage on washing when purchasing bed sheets.

(13) The Commissioner of Excise, Bombay, had invited tenders from clothing contractors for the supply of woollen jerseys to the Excise Constabulary staff. Five parties had submitted their tenders with samples but the quality of the samples furnished by them was not uniform and, consequently, there was difference in the prices quoted. He had, therefore, referred the matter to this Department for guidance. The samples were examined by this Department and a detailed report of the test with recommendations was furnished to the Commissioner.

(14) In response to tenders invited by him the Commissioner of Excise received quotations with samples of chappals from the Inspector General of Prisons as well as from a private contractor. The price quoted by the latter being less, the Commissioner desired the Inspector General of Prisons to accordingly reduce his price. This officer taking into consideration the working charges of a pair and the quality of raw material used and pattern followed declined to accede to the request of the Commissioner. A dispute thus arose over the question of price at which a manufacturing Government Department should supply goods to an indenting Government Department. On the case being referred to this Department for advice in the matter samples of both the tenderers were examined by this Department, working charges per pair of both were estimated and the Commissioner was advised to accept a counter sample prepared by the Jail Department in accordance with this Department's suggestions at an agreed price.

(15) The Superintendent, Ahmedabad Central Prison, supplied 52 pugrees to the Government Printing and Stationery Department which the latter returned on the grounds that the same were loosely woven and not according to the sealed approved samples. The Superintendent of the Prison, however, opined that at least some 17 out of the rejected 52 were to the required standard and requested the Government Printing and Stationery Department to accept them accordingly and pay a reasonably reduced price for the remaining 35 pugrees to avoid loss to Government as the peons' pugrees are not readily saleable in the market. The Superintendent, Government Printing and Stationery, did not, however, accede to the request and advised the Jail Department to refer the matter for arbitration and award to the Director of Industries. The samples of all the rejected pugrees were examined by this Department and a reasonable price was fixed on the basis of samples tested and the

Superintendent, Government Printing and Stationery, was advised to accept the pugrees at the rate fixed.

(16) The Inspector General of Prisons, Bombay Province, Poona, consulted this Department regarding (1) hand or power driven flour mills, (2) hand pumps or power pumps for lifting water, (3) the loan of services of the weaving assistants of this Department for improving the textile sections in jails, and (4) the desirability of organising a sales department by the Director of Industries for the sale of jail-made articles. Detailed estimates and specifications of the first two items were worked out and furnished to him together with appropriate remarks on the other two proposals.

ACTS, LEGISLATIVE PROPOSALS, ETC.

189. The undermentioned Bills, Acts, and proposals were referred to this Department for opinion during the year :—

(1) Proposed legislation for the Registration of Trade Marks in India.

(2) Proposed revision of the Indian Merchandise Marks Act, 1889.

(3) Proposal for modification in the existing scale of tolerances and allowances in respect of counts, length of hanks, etc., of yarn, as laid down in the Indian Merchandise Act, 1889.

(4) The Income tax (Amendment) Bill, 1938.

INFORMATION AND EVIDENCE FURNISHED TO TARIFF BOARDS.

190. During the year, this Department furnished information to and tendered evidence before two Tariff Boards appointed by the Government of India.

191. **Tariff Board on Sericulture Industry.**—The Tariff Board enquired into the necessity for the continuation of protection for the Sericulture Industry provided by the Indian Tariff (Textile Protection), Amendment Act, 1934. In this connection, the Board had to consider how any recommendations that it may make will affect the Handloom Industry. The Board accordingly issued a Questionnaire relating to hand weaving industry which called for detailed information on the subject from all the provincial Governments.

This Department prepared a detailed note on the questionnaire with samples of silk cloths and their costings, etc., and furnished the same to the Board through Government in the General Department. The Board was also given all possible assistance in this work by this Department, e.g., inspection by its members of the conditions of silk factory in the Northern Division, arranging for oral evidence of some silk factory

owners of Surat and so on. The Director of Industries and the Industrial Engineer gave oral evidence before the Board.

192. **Tariff Board on Paper and Pulp Industry.**—This Department compiled a note relating to the conditions of the Hand-made Paper Industry in the Province and submitted the same to Government in the General Department in May 1938, for transmission to the Tariff Board.

CONFERENCES, COMMITTEES, ETC.

193. During the year under report Mr. Advani attended the following conferences, committees, etc.—

194. **Industrial Research Council.**—The Fourth Session of the Industrial Research Council was held in Madras on the 8th and 9th August 1938. He attended the Session as the Official Representative along with Mr. B. S. Danke who was nominated by Government as a non-official member to attend the Session.

195. **Industries Conference.**—The Tenth Industries Conference was held in Bombay on 24th and 26th January 1939 and it was opened by H. E. the Viceroy. It was also attended by (1) The Honourable Mr. L. M. Patil, B.A., LL.B., Minister for Local Self-Government and Industries, (2) Mr. V. S. Bhide, I.C.S., Secretary to Government, General Department, Bombay, (3) Mr. M. G. Gupte, M.A., LL.B., Parliamentary Secretary to the Honourable the Minister for Local Self-Government and Industries, (4) Mr. M. D. Bhansali, I.C.S., Registrar, Co-operative Societies, Bombay Province, Poona.

Speaking on the second item on the Agenda relating to the development of the Scheme for Apprenticeship, Mr. Advani explained in detail the experience of the working of the Bombay Scheme and urged that it was necessary to consider seriously the introduction of legislation in this behalf. He also pointed out that as conditions did not vary greatly from Province to Province, the Central Government should undertake the necessary legislation, in the form of an enabling measure which the Provinces could bring into operation at will. It was further pointed out by him that the idea of legislation to this effect was not a new one and that such legislation had been passed in the United States of America, Canada, France and in England. As a result of the discussions on this item the consensus of opinion at the Conference was that legislation was desirable and that the Government of India should frame such legislation.

With regard to the utilisation of the services of the Indian Trade Commissioners with special reference to collection of information in regard to the running of small industries in Japan and European countries, etc., which formed the fourth item of the Agenda, he pointed out that

although the Provinces would have no objection to bearing the cost involved in the collection of necessary information, which would be small, as a matter of principle the cost involved ought to be met by the Central Government. No decision was reached in the matter.

The fifth item on the Agenda related to the holding of an Annual All-India Industries Fair on which was urged that a periodic central exhibition around which a tradition could be built up should be favoured. The proposal to appoint a sub-committee to explore the possibilities of establishing such a fair on a permanent and co-operative basis was supported, and it was generally agreed that the sub-committee should be set up to go into this question with Mr. Advani as one of the members.

Speaking on the matters arising out of the proceedings of the fourth session of the Industrial Research Council which formed the eleventh item of the Agenda, Mr. Advani said that the Industrial Research Council, although it was of opinion that the Industrial Research Bureau had justified its existence, strongly felt that the resources of the Bureau were much too limited. He referred briefly to the work which had already been undertaken by the Bureau and urged that in his opinion this did not represent the full scope of industrial research in a country which was eighth in importance in the list of industrial countries. He pointed out that research could not be conducted in any one particular place, that it was necessary to conduct research in environments suitable for a particular industry, and cited the example of the Imperial Council of Agriculture Reseach conducting and stimulating research work in all the Provinces simultaneously.

196. **Cottage and other Small Scale Woollen Industries Committee.**—This Committee also met in Bombay on 26th January 1939 and was attended by Mr. Advani, along with the Registrar, Co-operative Societies, Bombay Province, Poona, as representative of the Government of Bombay. The Committee reviewed the progress reports of the scheme forwarded by the different Provinces and considered suggestions for modifications to and expansion of schemes as submitted by some Provinces.

197. **The Bombay Economic and Industrial Survey Committee.**—Mr. Advani was an ex-officio member of this Committee which was appointed by Government under Government Resolution, General Department, No. 2429/33, dated 21st April 1938. Twenty-two meetings of the Committee were held during the year under review, almost all of which were attended by him. The Department also assisted the Committee with statistical and other information required by its office with regard to various cottage and large scale industries.

The expenditure debitable to this Department on this account during the year was Rs. 19,213-14-0.

198. **National Planning Committee.**—Mr. Advani attended the meetings of this Committee which were held in Bombay, and assisted in the drafting of its questionnaire and other matters. This Department prepared comprehensive replies to the Committee's questionnaire and submitted the same to Government in the General Department in March 1939.

199. **Electric Rates Committee.**—Mr. Advani continued to serve on this Committee during the year under review.

200. **Report on Scientific and Industrial Research, 1938-39.**—Statements of industrial and scientific researches in the prescribed forms were compiled for transmission to the Director of Industrial Research Bureau, New Delhi. The necessary data were obtained from the institutions concerned.

EXHIBITIONS.

201. During the year this Department participated in the following exhibitions :—

(1) *Science Exhibition in Aid of the Poor Boys' Fund and the Science Library, Karnatak College, Dharwar, held in February 1939.*—As the Department had already promised to demonstrate at other exhibitions to be organised in March 1939, no practical demonstrations in the extraction of essential oils could be set up at this exhibition. A small still designed for oil distillation was, however, sent to the exhibition for display so as to give some idea of equipment and methods of distillation to the visitors.

(2) *The Indian National Congress Khadi and Village Industries Exhibition, Tripuri, held in March 1939.*—The production of essential oils at the exhibition was demonstrated by deputing the technical staff with necessary equipments.

(3) *Poona Industrial Exhibition, held in March 1939.*—Stalls were organised by the Department of Industries for practical demonstrations in hand-loom weaving, dyeing and printing, and tanning as well as for the display of the art-crafts models turned out by the various technical and/or industrial schools of this Province recognised by this Department and of the Weights and Measures that were in vogue in the Province before the introduction of the Weights and Measures Act, 1932, and those prescribed under the Act.

Sari weaving of silk and cotton with gold thread and art-silk border, production of variegated designs by dobby-work, carding, spinning, dyeing and weaving of wool by improved implements were demonstrated which aroused considerable interest amongst the visitors. Practical demonstrations on tanning by improved methods and implements were also given.

A special demonstration of a tubular braiding machine for making banding and shoe-laces was given in the stalls of this Department which was keenly appreciated by visitors and led to many enquiries about its cost, utility, production, profit and loss on working it on cottage basis for the production of boot laces, file strings, etc. Some persons also received training on the machine at the exhibition stalls and two such knitting machines were introduced there.

Galicha, newar and carpet weaving was also demonstrated and several visitors attended the stalls for training on these implements.

Some twelve technical and industrial schools in the Provinces of Bombay and Sind under the control of the Committee participated in the Poona Industrial Exhibition through the Committee of Direction for Technical and Industrial Training, and exhibited articles made by the pupils during the course of their work. The articles exhibited embraced wood-work, metal work and textile manufacture such as teak-wood nest of teapoys in 5 pieces, engraved brass pan, brass water bottle, art silk carpet, portrayed *galicha*, toilet box, book rack, revolving mirror, wooden bull, flower pot, spoon, cigar case, coatings, towels, dhotees, chaddars, brass pulley, helical tooth gearwheel, bronze cup, screw press, iron plane, winch with worm gear, twisted canale stick stands, sisal hemp hand bag, beadchanin hand bag, cane chairs, waste paper baskets, paper knives, butter spades, coat-hangers, etc.

(4) *The Fifth Indian Industries Fair, Bombay, held in March 1939.*— Stalls were organised for the dispaly of (*i*) skins tanned by old and improved methods, (*ii*) leather goods, e.g., hand bags, travelling bags, boots, shoes, attache cases, etc., and for marketing of handloom products of the different district industrial co-operative associations, (*iii*) art-crafts, especially sandalwood carvings.

The Department also brought to the notice of the various commercial bodies exhibitions due to be held in other parts of the Province, India and abroad. Parties desiring to participate in any of them were given all possible information and assistance.

The Department also participated in the various activities relating to the Village Industries Scheme by deputing its technical staff to the various centres as required. Lectures on cottage industries were given by the staff with the aid of special portable weaving implements manufactured by the Department, with which the staff toured with the Village Uplift Van for propaganda and demonstration purpose in the Central Division and Southern Division according to the programmes scheduled by the Collectors. Similarly, arrangements were made for the demonstration of mica, calico and aerograph printing work in different villages. These activities of the Department met with considerable interest from the villagers.

LIBRARY.

202. During the year 1938–39, 375 new publications were added to the library attached to the Department, thus bringing the total number of books, publications, Directories, etc., in the library to over 6,130. Besides, some 44 Indian and foreign journals on industrial and technical subjects were also being received during the year. The library is open to the general public for reference and it is gratifying to note that full advantage of the facilities available for study and reference is being taken.

The Department's library is also the inspection centre in Bombay for the Patent Office publications. About 1,649 volumes of these publications, dating back from the year 1920, are available for inspection. On 38 occasions during the year, inspections of the English as well as Indian patent specifications were demanded by members of the public and were granted.

CHAPTER XIII.

STAFF AND EXPENDITURE.

STAFF.

203. Mr. P. B. Advani held the post of Director of Industries during the year under review except for nine days from 3rd to 11th January 1939, both days inclusive, when he was on leave. During the year Dr. M. S. Patel, M.Sc., Ph.D. (Cornell), resigned the post of Industrial Chemist from 1st August 1938. The post remained vacant until Dr. N. R. Damle, M.Sc., Ph.D. (London), who was appointed instead reported to duty on 1st December 1938. Mr. S. Raja, the Tanning Expert, was also appointed Superintendent, Government Tanning Institute, Khar, in addition to his own duties. The post of the Marketing Officer which became vacant owing to the resignation of Mr. N. M. Shah during 1937–38 was filled during the year by the appointment of Mr. S. N. Munshi from 16th June 1938. The services of Mr. T. V. Lalwani, Warden of Weights and Measures, were terminated on 31st December 1938 and the post remained vacant during the remaining period of the year.

The following were the more important non-gazetted technical officers appointed during the year :—(1) Superintendent of the Leather Working School, Khar; (2) Assistant Superintendent for the Tanning School: (3) the Research Assistant, One Assistant Chemist, and one Junior Chemist for the Industrial Chemist's Laboratory; (4) the Workshop Superintendent and Fibre Expert in connection with the Industrial Engineer's Workshop; (5) the Coir Supervisor in connection with the scheme for coir manufacture school; and (6) the Wool Expert under the scheme for

the development of cottage and small scale woollen industries, financed by the Government of India. To meet the extraordinary increase in the pressure of office work owing to the new schemes, the clerical staff was strengthened by the appointment of 8 clerks on a temporary basis. The rest of the personnel of the Department continued to be the same as in the previous year.

TOURING.

204. During the year under review Mr. P. B. Advani was out of Bombay for 29 days. His tours were chiefly in connection with the meetings of the Dapuri Workshop Committee, Poona, and Industrial Research Council, Madras, and inspection of the weaving and dyeing institutions of this Department, technical and industrial schools and the working of the Weights and Measures Section.

The Deputy Director was out of Bombay for 16 days, the Industrial Engineer for 19 days, the Industrial Chemist who resigned on 1st August 1938 for 9 days, the Fisheries Officer for 25 days, the Marketing Officer (Handloom Products) for 78 days, Textile Designer (Handloom Products) for 121 days, Tanning Expert for 57 days, the Warden for 23 days and the two Assistant Wardens for 100 days and 111 days respectively.

VISITS TO WORKS.

205. The Director, Deputy Director, the Industrial Engineer, the Industrial Chemist and the Tanning Expert visited several concerns in connection with various investigations in hand and for rendering technical advice.

EXPENDITURE.

206. The expenditure incurred by the Department of Industries during the financial year 1938-39 and the four preceding years was as follows :—

	Rs.
1934-35	3,43,564
1935-36	6,31,903
1936-37	6,20,043
1937-38	7,29,597
1938-39	8,44,768

The figures of expenditure given above are exclusive of the expenditure on such activities as the marketing of handloom products and the Woollen Scheme referred to in Chapter VII. These activities were financed

from the funds placed at the disposal of the Government of Bombay by the Government of India and the expenditure under each of these activities during the year under report was as under :—

	Rs.
(1) Marketing of Handloom Products ..	31,840
(2) Woollen Scheme	12,347

The total expenditure on all the activities of the Department for the year 1938–39 was, therefore, Rs. 8,88,955.

The total receipts during the year amounted to Rs. 4,58,604. Out of this sum, Rs. 3,71,157 were realised from the fees collected by the Government Inspectors of Weights and Measures and Rs. 65,191 from Fish Curing Yards. Receipts on account of the other activities of the Department amounted to Rs. 22,256.

207. **Conclusion.**—The various new schemes of work undertaken by the Department added enormously to the already heavy work of the staff, who consequently had to put in much over time. It gives me great pleasure to report to Government that all the work described in the previous chapters has been made possible by the willing and efficient assistance rendered by every member of the staff of the Department.

D. C. GUPTA,
Director of Industries.

Bombay, 30th August 1939.

APPENDIX A.

Expenditure on peripatetic Handloom Weaving and Dyeing Institutions.

Credit. *Debit.*

Particulars.	Amount.	Particulars	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles etc.	2,667 12 3	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment i.e. Weaving Assistants, Masters, demonstrators etc.	21,025 15 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	1,255 14 11
		(*iv*) Allowances and Honoraria.	3,592 6 0
		(*v*) Scholarships and Prizes ..	910 0 0
		(*vi*) Stores purchased ..	4,138 3 8
		(*vii*) Other miscellaneous expenses.	3,617 6 3
Total ..	2,667 12 3	Total ..	34,539 13 10

*Instructions in all institutions are imparted free of charge.

APPENDIX B

Expenditure on the Government Hand Weaving Institute, Poona.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment i.e. Teaching staff etc.	7,118 2 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	122 15 9
		(*iv*) Allowances and Honoraria.	563 2 0
		(*v*) Scholarships	1,972 2 0
		(*vi*) Stores purchased ..	334 15 9
		(*vii*) Other Miscellaneous expenses.	2,574 0 0
Total ..	....	Total ..	12,685 5 6

*Instruction is imparted free in the Institute.

APPENDIX C.

Expenditure on Village Tanning Demonstration Parties.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of tanned hides and skins, etc.*	644 10 6	(*i*) Pay of officers ..	3,600 0 0
(*ii*) Fees from students† ..	....	(*ii*) Pay of establishment i.e. demonstrators, etc.	6,339 15 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	37 1 6
		(*iv*) Allowances and Honoraria	1,973 9 0
		(*v*) Stores Purchased ..	671 14 5
		(*vi*) Scholarships and prizes ..	1,149 3 0
		(*vii*) Miscellaneous and other expenses.‡	1,214 7 3
Total ..	644 10 6	Total ..	14,986 2 2

* Leather worth Rs. 492-12-6 was sold to the Government Leather Working School, Khar.

† Instruction in all the Demonstrations is imparted free of charge.

‡ This includes grant-in-aid for helping tanners with sheds and implements.

APPENDIX D.

Expenditure on and receipts from the Cane and Bamboo Work Demonstration.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	205 15 0	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment i.e. Teaching staff, etc.	877 14 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	14 0 0
		(*iv*) Allowances and honoraria	....
		(*v*) Scholarships and prizes ..	156 8 0
		(*vi*) Stores purchased ..	236 0 0
		(*vii*) Other Miscellaneous expenses.	208 7 0
Total ..	205 15 0	Total ..	1,492 13 0

* Instruction is imparted free of charge.

APPENDIX E

Expenditure on and receipts from the Lacquer Work Demonstration.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment i.e. Teaching staff, etc.	1,134 13 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	....
		(*iv*) Allowances and honoraria	70 12 0
		(*v*) Scholarships† ..	500 0 0
		(*vi*) Stores purchased ..	25 6 0
		(*vii*) Other Miscellaneous expenses.	....
Total ..	....	Total ..	1,730 15 0

* Instruction is imparted free of charge.
† This was tuition fees for training the selected demonstrators in Mayo School of Art, Lahore.

APPENDIX F.

Expenditure on and receipts from the Coir Manufacture School.

Credit. *Debit*

Particulars	Amouut.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	....	(*i*) Pay of officers ..	....
(*ii*) Fees from students* ..	....	(*ii*) Pay of establishment i.e. Teaching staff, etc.	1,864 13 0
(*iii*) Miscellaneous ..	....	(*iii*) Wages of workmen ..	8 0 0
		(*iv*) Allowances and honoraria	573 4 0
		(*v*) Scholarships	6 0 0
		(*vi*) Stores purchased ..	1,616 12 6
		(*vii*) Other Miscellaneous expenses.†	695 13 0
Total ..	....	Total ..	4,764 10 6

* Instruction is imparted free of charge.
† This includes Rs. 310 for the construction of a temporary shed for school specially erected in the absence of a suitable house to accommodate the school.

APPENDIX G

Statement showing Membership, Capital, Advances from Government and Loans from Bank, relating to different Associations under the Marketing Scheme for Handloom Products.

Name of the Association	Membership as on		Share capital as on		Advances from Government for capital as on		Loan from Banks as on	
	31st March 1938	31st March 1939	31st March 1938	31st March 1939	31st March 1938	31st March 1939	31st March 1938.	31st March 1939.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar.	522	545	1,026 8 0	1,288 7 0	6,000 0 0	8,000 0 0	6,401 2 0	12,377 15 7
The Industrial Co-operative Association Ltd., Southern Division, Hubli.	229	240	1,098 0 0	1,224 0 0	4,000 0 0	6,000 0 0	4,660 0 0	2,948 8 0
The Northern Divisional Industrial Co-operative Association Ltd., Ahmedabad.	141	178	770 0 0	904 0 0	4,000 0 0	4,000 0 0	*Nil.*	*Nil.*
The Sholapur District Industrial Co-operative Association Ltd., Sholapur.	..	405	....	11,100 8 0	....	*Nil.*	....	*Nil.*
The Industrial Co-operative Association Ltd., Yeola (District Nasik).	251	251	5,000 0 0	5,000 0 0	*Nil.*	*Nil.*	*Nil.*	*Nil.*
The Industrial Co-operative Association Ltd., Malegaon (District Nasik).	..	237	....	2,557 15 0	....	2,000 0 0	....	*Nil.*
The Bijapur District Industrial Co-operative Association Ltd., Kamatgi.	..	168	....	1,705 0 0	....	2,000 0 0	....	*Nil.*

APPENDIX H.

Statement showing sales of raw materials, finished products, gross profits, etc. of different Associations under the Marketing Scheme for Handloom Products.

Name of the Association.	SALES.							
	Raw materials.		Finished Products.		Total.		Gross Profit.	
	1937-38.	1938-39.	1937-38.	1938-39.	1937-38.	1938-39.	1937-38.	1938-39.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
North Central Divisional Industrial Co-operative Association Ltd., Ahmednagar	11,368 3 3	19,312 9 0	17,696 4 0	15,269 13 3	29,064 7 6	34,582 6 3	1,709 12 0	1,681 10 6
The Industrial Co-operative Association Ltd., Southern Division, Hubli	16,404 7 6	14,275 9 6	9,124 6 9	8,577 2 6	25,528 14 3	22,852 12 0	1,082 0 0	427 14 3
The Northern Divisional Industrial Co-operative Association Ltd., Ahmedabad	3,099 4 0	1,535 14 0	4,992 5 3	7,088 3 6	8,091 9 3	8,624 1 6	393 13 3	315 0 0
The Sholapur District Industrial Co-operative Association Ltd., Sholapur	....	41,771 12 6	....	4,513 8 3	....	46,285 4 9	....	560 6 0
The Industrial Co-operative Association Ltd., Yeola (District Nasik)	1,023 5 6	813 13 0	571 5 6	1,163 13 6	1,594 11 0	1,977 10 6	69 13 3	36 13 3
The Industrial Co-operative Association Ltd., Malegaon (District Nasik)	....	768 11 6	....	1,233 14 6	....	2,002 10 0	....	197 1 0
The Bijapur District Industrial Co-operative Association Ltd., Kamatgi	....	1,082 2 3	....	34 15 6	....	1,117 1 9	....	2 9 6

APPENDIX I.

RECOGNIZED TECHNICAL AND INDUSTRIAL INSTITUTIONS IN THE PROVINCE OF BOMBAY DURING 1938-39.

	Grants sanctioned in 1938-1939.	
	Recurring.	Non-recurring.
(a) Schools run by Local Bodies Receiving grant-in-aid from the Department of Industries, Bombay.		
	Rs.	Rs.
1. F. S. Parekh Technical Institute, Surat	6,000	253
2. V. J. Municipal Technical School, Poona	2,475	....
3. D. L. Board Industrial School, Satara	1,366	....
4. Robertson School of Industry, Pandharpur	808	....
5. King Edward VII Technical School, Dhulia	4,290	1,519
6. School of Industry, Ratnagiri	6,915	....
7. Municipal Technical School, Sholapur	2,450	....
(b) Schools managed by Private Bodies receiving grant-in-aid from the Department of Industries, Bombay.		
8. Nadiad Industrial Institute, Nadiad	.. School closed during the year.	
9. S. A. Boys' Industrial School, Kaira Camp	556	....
10. I. P. Mission Industrial School, Borsad	742	....
11. Vocational Training School, Ankleshwar	781	....
12. Mahajan Home Industrial School, Surat	506	....
13. A. R. Sonawala Industrial School, Bordi	1,100	....
14. Mission Industrial School, Poona	960	....
15. Sir D. M. Petit Industrial School, Sirur	770	....
16. S. P. G. Mission Industrial School, Ahmednagar	1,364	....
17. S. A. Boys' Industrial School, Ahmednagar	412	....
18. K. E. S. Topiwala Industrial School, Alibag	1,683	....
19. A. M. Mission School for the Blind, Bombay	1,074	....
20. Textile Technical School, Parel, Bombay	1,399	....
21. D. N. Poor Boys' Seminary Industrial School, Bombay ..	731	....
22. Am. Wes. Mission Industrial School, Sanjan	180	....
23. St. Barnabas Industrial School, Manmad	1,139	....
24. S. A. Willingdon boys' Industrial Home, Bombay	950	....
25. Technical Institute attached to Fergusson College, Poona ..	*Nil.*	3,901
Total ..	38,651	5,673

(c) *Schools run by Local Bodies not receiving grant-in-aid but recognised by the Department of Industries.*

26. Thana School Board's Carpentry Class at Dahanu.
27. Thana School Board's Carpentry Class at Mokhada.
28. Thana School Board's Handloom Weaving Class at Shahapur.

(d) *Schools managed by Private Bodies not receiving grant-in-aid but recognised by the Department of Industries.*

29. Jadhav College of Tailoring and Cutting, Poona.
30. Pandharpur Electric Supply Co.'s Wiremen's Class, Pandharpur.
31. Bai Avabai Framji Petit Parsi Girls' Orphanage, Bandra (Weaving, Dyeing and Printing Classes).
32. Radio Electric Institute, Bombay.
33. J. N. Petit Parsi Orphanage Carpentry Class, Bombay.
34. The Victoria Tailoring and Cutting College, Poona.
35. Marine High School Industrial Classes, Novha.
36. N. G. Rao's English Tailoring College, Bombay.
37. Zarapkar Tailoring and Cutting Institute, Poona.
38. E. M. F. Radio Institute, Bombay.
39. Goan Emigrants Fund Committee's Wiremen's Classes, Bombay.
40. Khalsa College, Bombay Technical Institute's Radio Class, Bombay.
41. R. G. Tamhankar's Wiremen's Class, Ahmednagar.
42. Chicago Radio Institute, Bombay.
43. The Parsi Technical and Industrial Institute, Surat.
44. The Modern High School, Ahmednagar (Carpentry and Tailoring Classes).
45. The Primary Handicrafts Classes, Girgaum, Bombay.
46. School of Radio Physics and Electronics, Poona.
47. Maharashtra Mudran Shala, Poona.
48. Zarapkar Tailoring and Cutting Institute, Dadar, Bombay.
49. Tailoring Class of Bhagini Samaj, Bombay.
50. Chimanlal Nagindas Industrial School, Ahmedabad.
51. Jyoti Sangh, Ahmedabad, Tailoring and Dyeing Printing Classes.
52. Vithoba Khandoba High School (Typography Class), Panvel.

(e) *Government Reformatory and Settlement Schools.*

53. Yeravda Industrial School, Yeravda.
54. David Sassoon Industrial School.
55. Industrial Settlement School, Sholapur.
56. Industrial Settlement School, Bijapur.
57. Industrial Settlement School, Hubli.

(f) Government Technical and Industrial Schools controlled by the Department of Industries.

58. R. C. Technical Institute, Ahmedabad.
59. Government Tanning Institute, Khar, Bombay.

(g) Industrial Institutions and Classes recognised for examinations only.

60. B. N. Gamadia Parsi Hunnar Shala, Bombay.
61. Byculla Marathi Central School, Bombay.
62. Ghodapdeo Marathi Central School, Ghodapdeo, Bombay.
63. Khetwadi Marathi Central School, Khetwadi, Bombay.
64. Foras Road Marathi Central School, Foras Road, Bombay.
65. Lamington Road Gujerati Central School, Bombay.
66. Parel Marathi Central School, Parel, Bombay.
67. R. C. Mahi, Urdu Central School, Mahim, Bombay.
68. Lady Jamshedji Road Marathi Central School, Dadar, Bombay.
69. Imamwad Central School, Imamwada, Bombay.

APPENDIX J.

Courses of Instruction recognised by the Department of Industries through the Committee of Direction for Technical Education.

1. Higher Grade Mechanical Engineering.
2. Lower Grade Mechanical Engineering.
3. Automobile Engineering.
4. Higher Grade Textile Manufacture (Spinning and Weaving).
5. Lower Grade Textile Manufacture (Spinning and Weaving).
6. Carpentry Practice, Drawing and Wood Work Technology.
7. Trained Maistry Course.
8. Mechanical Apprentice Course.
9. Automobile Apprentice Course.
10. Handloom Weaving.
11. Typography (composition and printing).
12. Carpentry and Smithy (Agricultural).
13. Tailoring and Cutting.
14. Practical Tailoring.
15. I and II Class Electric Wiremen's Courses.
16. Radio Communication.
17. Leather Work.
18. Electroplating and Battery Charging.
19. Dyeing and Printing.
20. Wood turning and Lacquering.
21. Electrical Engineering.
22. Internal Combustion Engineering.
23. Tanning.
24. Pigments Paints and Varnishes.

APPENDIX K.

Expenditure on and the Receipts from the R. C. Technical Institute, Ahmedabad.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(*i*) Sale proceeds of articles ..	197 7 6	(*i*) Pay of officers ..	7,210 11 0
(*ii*) Fees from students ..	3,410 10 0	(*ii*) Pay of establishment ..	18,687 11 0
(*iii*) Miscellaneous contribution.	39 6 0	(*iii*) Wages of workers ..	....
		(*iv*) Allowances and honoraria.	9 0 0
		(*v*) Scholarships ..	689 11 0
		(*vi*) Stores purchased ..	4,363 0 0
		(*vii*) Other miscellaneous expenditure ..	3,186 10 4
Total ..	3,647 7 6	Total ..	34,146 11 4

APPENDIX L.

Expenditure on the Government Tanning Institute, Khar.

Credit. *Debit.*

Particulars.	Amount.	Particulars.	Amount.
	Rs. a. p.		Rs. a. p.
(1) Sale proceeds of articles ..	151 14 0	(*i*) Pay of officers—Superintendent ..	....
(2) Fees from students ..	....	(*ii*) Pay of establishment ..	1,624 8 0
(3) Miscellaneous contribution.	....	(*iii*) Wages of workmen ..	....
		(*iv*) Allowance, honoraria, etc.	65 15 0
		(*v*) Scholarships ..	....
		(*vi*) Stores purchased ..	12,708 14 3
		(*vii*) Other miscellaneous expenses ..	937 1 3
Total ..	151 14 0	Total ..	15,336 6 6

APPENDIX M.

Statistics showing the Different Varieties and Quantities of Fish (in lb.) brought by the Launches during 1938-39.

Variety of fish.	Names of Launches.									
	Lady Brabourne.	Lord Brabourne.	Sir Frederick Sykes.	Lady Sykes.	Hydari.	Chandtara.	Noore-mohomadi.	Sea Hawk.	Karimi.	Total.
Hulva	46,018	53,912	....	46	....	6,675	....	819	606	108,976
Bhing	5,448	7,010	....	....	....	584	....	25,743	1,409	40,194
Karli	500	900	....	8	....	....	....	....	1,345	2,753
Dara	20,175	22,190	1,875	6,795	....	2,000	....	75	....	53,110
Ghol	295	5,370	....	115	45	....	....	9,755	1,247	16,827
Surmai	831	11,895	....	10	....	1,056	900	992	....	15,684
Khajuri	....	525	....	....	....	....	....	75	....	600
Pomfrets	374	3,836	....	28,534	6,882	3,500	....	2,270	445	45,841
Towar	....	47	....	....	....	....	....	5,420	1,339	6,806
Datali	80	10	....	....	....	....	....	10,884	....	11,074
Dagol	....	105	....	....	....	198	20	....	....	323
Rawas	19	361	....	5	....	....	....	490	323	1,198
Kuppa ..	....	188	....	....	....	112	....	....	....	300
Boi	....	110	....	....	....	....	....	25	....	135
Mackerel	213,670	352,450	19,200	66,764	73,626	228,750	267,843	....	....	1,222,303
Sardine	10,700	1,600	....	....	....	....	....	....	....	12,300
Kot	60	1,260	....	1,136	20	....	....	240	....	2,716
Prawns	2,000	80	....	1,320	20	....	....	....	....	3,420
Crabs	....	655	....	....	....	....	....	....	....	655
Shingala	....	110	....	....	120	....	....	....	....	230
Ganesh	....	....	....	12,525	....	....	....	....	....	12,525
Small fish	80	3,019	....	284	80	282	2,000	13,767	....	19,612
Total ..	300,350	465,733	21,075	117,542	80,793	243,157	270,763	70,555	6,714	1,576,682

1. "Sir Frederick Sykes" did not operate throughout the season on account of engine trouble. She made only four voyages.
2. "Sea Hawk" made her first voyage on 11th November 1938.
3. "Karimi" made her first voyage on 27th February 1939.

APPENDIX N.

Pro forma Account of the Fish-curing Yards for the year ended on 31st March 1939.

Expenditure.			Receipts.			
Details of expenditure.		Amount.	Details of receipts.			Amount.
	Rs.	Rs.		Rs.	a.	p.
Opening stock of salt ..		27,158	Total amount remitted to treasury			64,760 8 6
Purchase and transport charges of salt paid during the year 1938-39		23,761	*Add*—			
Petty construction and repairs—		4,535	(1) Overtime fees recovered from fish curers shown as less receipts in the account for the year 1937-38 ..			+14 6 0
Departmental	2,844		(2) Amount on account of cost of denatured salt shown as less receipts in the amount for the year 1937-38			+160 8 0
P. W. D. ..	1,691		Gross receipts ..			64,935 6 6
Other non-contract contingencies		2,807	*Less*—			
Add—Cost of stationery and forms		472	(1) Overtime fees recovered from fish curers during 1938-39 to be disbursed to staff during 1939-40			−98 13 0
Pay of yard and supervising establishment		28,858				
Travelling allowance of yard and supervising establishment.		969				
House rent to yard establishment		397				
Escort charges of salt ..		787				
Total expenditure during 1938-39.		89,744	Net receipts ..			64,837 0 0
Add—Pensionary charges at 8⅓ per cent. of the maximum pay of establishment ..		2,803				
Total ..		92,547	Add net loss during the year ..			5,379 0 0
	Rs.					
Less—Cost of salt in stock at yards on 31st March 1939 after close of transactions ..	23,279	22,331				
Deduct—Cost of salt actually not paid during the year 1938-39 ..	−948					
Net expenditure at the yards..		70,216	Total ..			70,216 0 0

APPENDIX O.

Statement showing operations of the Fish Curing Yards in the Ratnagiri and Kanara Districts of the Bombay Province for the year ended on 31st March 1939.

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yards including pension contribution.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of Salt in stock at the close of the year.	Total of Cols. 9, 10, and 11.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
	Ratnagiri District.											
1	Boria	1937-38 ..	*712 20 0	237 20 0	535 5 0	3·00	1,024 10 3	237 8 0	4 12 0	1,494 15 0	692·3 0	934 7 0
		1938-39 ..	2,418 0 0	806 0 0	1,813 20 0	3·16	1,294 13 9	806 0 0	15 12 0	1,178 26 0	512 6 5	1,334 2 5
2	Jaigad	1937-38 ..	13,422 0 0	4,457 0 0	10,066 20 0	3·00	3,512 13 6	4,457 0 0	4 12 0	2,039 10 0	922 13 6	5,381 9 6
		1938-39 ..	12,543 0 0	4,178 0 0	9,407 10 0	3·30	3,642 10 3	4,178 0 0	1 0 0	2,737 2 0	1,080 12 11	5,259 12 11
				(a) 19 16 0				(a) 5 0 0				(a) 5 0 0
3	Varoda	1937-38 ..	1,420 20 0	473 20 0	1,065 15 0	3·00	1,248 1 8	473 8 0	1 12 0	614 22 0	291 15 1	767 3 1
				(a) 9 28 0				(a) 5 0 0				(a) 5 0 0
		1938-39 ..	2,118 0 0	706 0 0	1,588 20 0	3·00	1,440 12 10	706 0 0	2 2 0	670 5 0	275 5 7	983 7 7
				(a) 23 11 0				(a) 12 0 0				(a) 12 0 0
4	Kalbadevi ..	1937-38	1,420 20 0	473 20 0	1,065 15 0	3·00	818 3 7	473 8 0	....	548 3 40	254 1 7	727 9 7
							*80 0 0					
		1938-39 ..	984 0 0	328 0 0	738 0 0	3·06	983 4 3	328 0 0	....	662 32 0	277 8 7	605 8 2
							*80 0 0					

5	Ratnagiri ..	1937-38 ..	30,033 0 0	9,956 0 0	22,524 30 0	3·00	5,447 12 11	9,956 0 0	....	3,258 15 0	1,596 7 10	11,552 7 10
				(a) 19 16 0			*343 0 0	(a) 15 0 0				(a) 15 0 0
		1938-39 ..	24,309 0 0	8,155 0 0	18,231 30 0	3·20	5,920 9 5	8,155 0 0	....	4,772 13 0	2,014 4 2	10,169 4 2
				(a) 106 28 0			*622 4 0	(a) 50 0 0				(a) 50 0 0
6	Purnagad ..	1937-38 ..	3,519 0 0	1,173 0 0	2,639 10 0	3·00	1,487 10 1	1,173 0 0	2 0 0	865 0 0	394 8 6	1,569 8 6
		1938-39 ..	1,854 0 0	618 0 0	1,390 20 0	3·00	1,655 2 2	618 0 0	2 8 0	1,011 33 0	405 2 0	1,025 10 0
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
7	Jaitapur ..	1937-38 ..	9,894 0 0	3,298 0 0	7,420 20 0	3·00	2,921 4 7	3,298 0 0	1 8 0	3,022 9 0	1,376 5 9	4,676 7 9
				(a) 2 36 40				(a) 1 8 0				(a) 1 8 0
		1938-39 ..	9,354 0 0	3,118 0 0	7,015 20 0	3·00	2,657 8 0	3,118 0 0	0 8 0	3,372 17 0	1,383 10 9	4,502 2 9
8	Vijaydurg ..	1937-38 ..	7,081 20 0	2,360 20 0	5,311 5 0	3·00	2,192 4 7	2,360 8 0	2 7 0	1,751 14 0	1,223 15 11	3,586 14 11
				(a) 23 11 0				(a) 12 0 0				(a) 12 0 0
		1938-39 ..	7,647 0 0	2,549 0 0	5,735 10 0	3·00	2,554 3 10	2,549 0 0	3 0 0	1,649 9 0	667 0 2	3,219 0 2
				(a) 9 28 0				(a) 5 0 0				(a) 5 0 0
9	Mumbri ..	1937-38 ..	1,515 0	303 0 0	1,136 10 0	5·00	1,068 7 6	303 0 0	4 8 0	392 5 0	199 8 11	507 0 11
				(a) 19 16 0				(a) 42 8 0				(a) 42 8 0
		1938-39 ..	752 20 0	150 20 0	564 15 0	5·00	1,108 14 2	150 8 0	4 8 0	523 32 0	294 9 5	449 9 5
				(a) 111 22 0				(a) 15 0 0				(a) 15 0 0
10	Mithbao ..	1937-38 ..	295 0 0	65 0 0	221 10 0	4·54	1,067 10 6	65 0 0	0 8 0	985 2 0	490 3 6	555 11 6
								(a) 10 0 0				(a) 10 0 0
		1938-39 ..	1,445 0 0	289 0 0	1,083 30 0	5·00	1,316 2 7	289 0 0	1 0 0	676 26 0	336 11 10	626 11 10
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0

*Expenditure incurred by the P. W. D. on structures at the yards transferred to their control.

APPENDIX O—*contd.*

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish to each maund of salt.	Total expenditure at the yards including pension contribution.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of Salt in Stock at the close of the year.	Total of Cols. 9, 10 and 11.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
11	Achra	1937-38 ..	1,193 0 0	301 0 0	898 0 0	3·96	907 8 0	301 0 0	0 12 0	606 30 0	319 14 3	621 10 3
		1938-39 ..	1,654 20 0	419 20 0	1,240 35 0	3·82	1,180 12 6	419 8 0	0 8 0	678 16 0	303 4 1	723 4 1
12	Talas'l	1937-38 ..	517 20 0	110 20 0	414 25 0	4·68	1,450 14 0	110 8 0	2 3 0	1,584 17 40	877 5 3	990 0 3
		1938-39 ..	869 0 0	239 0 0	700 0 0	3·63	1,027 13 10	239 0 0	0 6 0	1,345 17 40	752 13 6	992 3 6
13	Malwan ..	1937-38 ..	21,148 20 0	4,463 20 0	15,861 15 0	4·74	3,882 9 8	4,463 8 0	16 2 0	4,945 33 40	2,351 13 0	6,831 7 0
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
		1938-39 ..	21,089 20 0	4,462 20 0	15,817 5 0	4·73	3,787 1 9	4,462 8 0	63 0 0	5,132 28 0	2,123 4 1	6,748 12 1
				(a) 81 19 16				(a) 52 0 0				(a) 52 0 0
14	Deobag	1937-38 ..	12,003 0 0	2,653 0 0	9,002 10 0	4·52	2,354 10 1	2,653 0 0	8 8 6	3,502 33 0	1,637 11 1	4,299 3 7
		1938-39 ..	7,204 0 0	1,568 0 0	5,402 20 0	4·59	2,308 0 0	1,568 0 0	6 4 0	3,873 22 0	1,679 2 3	3,253 6 3
				(a) 24 10 0				(a) 12 8 0				(a) 12 8 0
15	Mobar	1937-38 ..	4,879 0 0	1,170 0 0	3,559 10 0	4·17	1,818 4 2	1,170 0 0	3 4 0	2,470 5 40	1,164 10 4	2,337 14 4
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
		1938-39 ..	3,195 20 0	788 20 0	2,396 25 0	4·05	1,969 11 6	788 8 0	2 2 0	2,664 2 40	1,186 14 11	1,977 8 11

16	Kochra	1937-38 ..	2,409 20 0	566 20 0	1,807 5 0	4·25	2,028 13 0	566 8 0	0 8 0	770 1 0	394 0 2	961 0 2
		1938-39 ..	984 20 0	214 20 0	738 15 0	4·59	1,637 6 0	214 8 0	1 3 0	555 21 0	284 4 1	499 15 1
17	Vengurla ..	1937-38 ..	9,864 0 0	2,540 0 0	7,398 0 0	3·88	3,020 9 10	2,540 0 0	....	6,138 17 0	2,915 14 2	5,455 14 2
				(a) 966 5 0			*174 7 3	(a) 606 0 0				(a) 606 0 0
		1938-39 ..	7,836 0 0	1,965 0 0	5,877 0 0	3·99	1,437 15 5	1,965 0 0	1 10 0	2,946 16 20	1,399 9 9	3,366 3 9
				(a) 1,201 34 0			*224 0 0	(a) 401 0 0				(a) 401 0 0
18	Shiroda	1937-38 ..	5,243 20 0	1,212 20 0	3,932 35 0	4·28	2,082 6 1	1,212 8 0	....	2,257 20 0	1,133 4 7	2,345 12 9
				(a) 685 12 16				(a) 353 4 0				(a) 353 4 0
		1938-39 ..	3,973 0 0	935 0 0	2,979 30 0	4·25	1,842 8 0	935 0 0	6 11 6	1,886 2 0	928 6 8	1,870 2 2
				(a) 19 16 0				(a) 10 0 0				(a) 10 0 0
	Total, Ratnagiri District..	1937-38 ..	1,26,571 0 0	35,814 0 0	94,959 0 0	..	38,384 10 0	35,814 0 0	50 8 6	37, 46 23 0	18,237 6 5	54,101 14 11
				(a) 1,764 35 56			*597 7 3	(a) 1,070 4 0				(a) 1,070 4 0
		1938-39 ..	1,10,229 20 0	31,489 20 0	82,720 25 0	..	37,765 6 3	31,489 8 0	212 2 6	36,377 0 20	15,905 3 2	47,606 13 8
				(a) 1,636 16 16			*926 4 0	(a) 582 8 0				(a) 582 8 0
	Kanara District.											
19	Baitkhol.. ..	1937-38 ..	280 0 0	56 0 0	224 0 0	5·00	2,427 1 5	56 0 0	2 1 0	3,705 8 40	1,466 10 4	5411 4
		1938-39 ..	20,719 0 0	6,501 20 0	15,471 35 0	3·19	4,297 10 11	6,501 8 0	867 1 0	2,220 6 0	898 4 8	8,266 13 8
				(a) 1 37 45				(a) 1 0 0				(a) 1 0 0

* Expenditure incurred by the P. W. D. on structures at the yards transferred to their control.
(a) Denatured salt issued to agriculturists.

APPENDIX O—*contd.*

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish each maund of salt.	Total expenditure at the yards including pension contribution.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. p.	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
20	Majali	1937-38 ..	13,086 0 0	3,399 0 0	9,814 20 0	—3·84	2,532 9 6	3,399 0 0	9 0 0	1,622 18 0	657 7 9	4,065 7 9
				(a) 1 18 0			*77 2 9	(a) 0 12 0				(a) 0 12 0
		1938-39 ..	21,399 20 0	5,592 0 0	16,049 35 0	3·83	3,313 2 11	5,592 0 0	19 11 0	1,583 4 0	666 1 0	7,838 6 10
							*76 7 0					
21	Bingi ..	1937-38 ..	13,175 0 0	4,025 0 0	9,150 0 0	3·27	2,994 2 11	4,025 0 0	....	1,559 9 0	616 10 3	4,641 10 3
				(a) 19 16 0			(a)* 77 2 10	(a) 10 0 0				(a) 10 0 0
		1938-39 ..	22,857 0 0	6,819 0 0	16,038 0 0	3·35	3,644 10 5	6,819 0 0	....	953 34 0	377 1 0	7,196 1 0
							*76 7 0					
22	Chendia ..	1937-38 ..	21,139 0 0	6,749 0 0	14,395 0 0	3·13	3,797 4 8	6,749 0 0	5 0 0	1,926 1 0	748 1 0	7,502 1 0
							*115 14 10					
		1938-39 ..	16,286 0 0	4,958 0 0	11,328 0 0	3·28	3,024 4 11	4,958 0 0	5 0 0	1,887 13 0	733 1 0	5,696 1 0
							*76 7 0					
23	Kodar	1937-38 ..	431 0 0	135 0 0	300 15 0	3·19	761 10 7	135 0 0	....	1,459 32 0	751 3 9	886 3 9
		1938-39 ..	352 20 0	114 20 0	241 15 0	3·08	845 2 2	114 8 0	0 12 6	1,308 17 0	673 5 4	788 9 10

24	Hardwada ..	1937-38 ..	7,239 0 0	2,166 20 0	4,9 30 0	3·34	1,858 5 8 *129 9 4	2,166 8 0	....	1,808 20 0	718 10 10	2,885 2 10
		1938-39 ..	8,091 0 0	2,065 20 0	5,710 30 0	3·92	1,825 3 5 *76 6	2,065 8 0	19 12 0	1,551 30 0	643 2 8	2,728 6 8
25	Keni	1937-38 ..	3,757 0 0	1,277 0 0	2,860 35 0	2·94	1,605 13 1 *77 2 10	1,277 0 0	....	1,492 26 0	573 26 0	1,850 2 0
		1938-39 ..	2,386 0 0	762 0 0 (a) 32 0 32	1,802 0 0	3·13	1,331 5 3 *76 6 9	762 0 0 (a) 16 8 0	0 4 0	1,473 28 0	582 1 0	1,344 5 0 (a) 16 8 0
26	Gangawali	1937-38 ..	3,482 0 0	1,030 0 0	2,659 24 0	3·38	1,026 15 2	1,030 0 0	2 3 0	589 0 0	232 11 2	1,264 14 2
		1938-39 ..	640 0 0	168 0 0 (a) 11 25 48	495 35 0	3·81	1,110 12 5	168 0 0 (a) 6 0 0	....	1,018 32 40	411 8 0	579 8 0 (a) 6 0 0
27	Kumta	1937-38 ..	2,849 20 0	858 0 0	1,864 35 0	3·32	1,231 5 5 *77 2 10	858 0 0	2 6 6	1,082 34 0	427 1 11	1,287 8 5
		1938-39 ..	1 998 0 0	423 20 0 (a) 24 10 0	1,395 25 0	4·72	887 13 5 *76 6 8	423 8 0 (a) 12 8 0	....	641 7 0	253 0 0	676 8 1 (a) 12 8 0
28	Mallukurwa ..	1937-38 ..	5,754 0 0	997 20 0	4,756 20 0	5·71	1,101 1 3	997 8 0	....	1,561 33 0	627 10 9	1,625 2 9
		1938-39 ..	5,525 0 0	925 0 0	4,600 0 0	5·97	1,266 8 8 76 6 9	925 0 0	7 12 0	1,412 38 0	579 12 5	1,512 8 5
29	Manki	1937-38 ..	2,648 20 0	580 20 0	1,986 15 0	4·56	1,186 3 5	580 8 0	10 0 0	1,056 28 0	421 15 7	1,012 7 7
		1938-39 ..	3,320 0 0	740 0 0 (a) 5 33 0	2,490 0 0	4·73	1,132 11 6	740 0 0 (a) 3 0 0	12 14 0	799 39 0	335 2 7	1,088 0 7 (a) 3 0 0

* Expenditure incurred by the P. W. D. on structures at the yards transferred to their control.

(a) Denatured salt issued to agriculturists.

APPENDIX O—*concld.*

Serial No.	Name of the yard.	Year.	Quantity of fish brought to be cured.	Quantity of salt issued.	Quantity of fish removed.	Proportion of fish each maund of salt.	Total expenditure at the yards including pension contribution.	Receipts.				
								Amount realised by sale of salt.	Miscellaneous receipts.	Stock of salt at the close of the year.	Value of salt in stock at the close of the year.	Total of Cols. 9, 10 and 12.
1	2	3	4	5	6	7	8	9	10	11	12	13
			Mds. s. t.	Mds. s. t.	Mds. s. t.		Rs. a. pi	Rs. a. p.	Rs. a. p.	Mds. s. t.	Rs. a. p.	Rs. a. p.
30	Murdeshwar ..	1937-38 ..	4,914 0 0	916 20 0	4.095 0 0	5·36	1,186 3 5	916 8 0	5 0 0	1,166 0 0	499 12 2	1,421 4 2
				(a) 7 30 0			*77 2 10	(a) 4 0 0				(a) 4 0 0
		1938-39 ..	2,567 20 0	525 20 0	2,057 0 0	4 89	1,143 6 2	525 8 0	16 1 6	1,119 31 0	481 2 2	1,022 11 8
				(a) 9 28 0			*76 6 9	(a) 5 0 0				(a) 5 0 0
31	Shirali	1937-38 ..	3,160 20 0	779 20 0	2,481 0 0	4·05	1,156 3 5	779 8 0	....	1,543 34 40	751 1 0	1,531 9 0
							*140 2 10					
		1938-39 ..	2,424 20 0	506 20 0	1,918 0 0	4·79	1,046 11 2	506 8 0	6 0 0	996 28 0	484 14 1	997 6 1
				(a) 36 34 40			*76 6 9					

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Government of Maharashtra
on 22 July, 2017

32	Bhatkal	1937-38 ..	2,194 0 0	486 0 0	1,708 0 0	4·51	692 6 6	486 0 0	12 8 0	827 10 0	427 5 3	925 13 3
				(a) 4 34 0			*77 2 10	(a) 2 8 0				(a) 2 8 0
		1938-39 ..	5,592 0 0	1,374 0 0	4,218 0 0	4·07	1,241 0 11	1,374 0 0	19 1 0	605 13 0	255 2 2	1,648 3 2
				(a) 19 16 0			*76 6 9	(a) 10 0 0				(a) 10 0 0
	Total, Kenara District ..	1937-38 ..	84,109 20 0	23,455 20 0	61,243 34 0	..	23,242 15 7	23,455 8 0	48 2 6	21,401 14 0	8,920 7 9	32,424 2 3
				(a) 33 18 0			*925 14 9	(a) 17 4 0				(a) 17 4 0
		1938-39 ..	1,14,158 0 0	31,475 0 0	83,816 15 0	..	26,109 8 3	31,475 0 0	974 5 0	17,573 10 40	7,373 10 2	39,822 15 2
				(a) 141 25 5			*764 4 2	(a) 54 0 0				(a) 54 0 0
	Grand Total ..	1937-38 ..	2,10,680 20 0	59,269 20 0	1,56,202 34 0	..	61,627 9 7	59,269 8 0	98 11 0	58,647 37 0	27,157 14 2	86,526 1 2
				(a) 1,798 14 56			*1,523 6 0	(a) 1,087 8 0				(a) 1,087 8 0
		1938-39 ..	2,24,387 20 0	62,964 20 0	1,66,537 0 0	..	63,874 14 6	62,964 8 0	1,186 7 6	53,910 10 60	23,278 13 4	87,429 12 10
				(a) 1,778 1 21			*1,690 8 2	(a) 636 8 0				(a) 636 8 0

* Expenditure incurred by the P. W. D. on structures at the yards transferred to their control.

(a) Denatured salt issued to agriculturists.

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